



RECEIVED #10

1

MAY 22 2003

SEQUENCE LISTING

TECH CENTER 1600/2900

<110> Fischer, Robert L.
Ohad, Nir
Kiyosue, Tomohiro
Yadegari, Ramin
Margossian, Linda
Harada, John
Goldberg, Robert B.
The Regents of the University of California

<120> Nucleic Acids That Control Seed and Fruit
Development in Plants

<130> 023070-086120US

<140> 09/177,249

<141> 1998-10-22

<150> US 09/071,838

<151> 1998-05-01

<160> 324

<170> PatentIn Ver. 2.0

<210> 1

<211> 2136

<212> DNA

<213> Arabidopsis sp.

<220>)

<221> CDS

<222> (43)..(2112)

<223> fertilization-independent endosperm 1 (FIE1) cDNA

<400> 1

aacatcagag aagacagaaa aaaaaagaaga ggcgagtggt ta atg gag aag gaa 54
Met Glu Lys Glu
1

aac cat gag gac gat ggt gag ggt ttg cca ccc gaa cta aat cag ata 102
Asn His Glu Asp Asp Gly Glu Gly Leu Pro Pro Glu Leu Asn Gln Ile
5 10 15 20

aaa gag caa atc gaa aag gag aga ttt ctg cat atc aag aga aaa ttc 150
Lys Glu Gln Ile Glu Lys Glu Arg Phe Leu His Ile Lys Arg Lys Phe
25 30 35

gag ctg aga tac att cca agt gtg gct act cat gct tca cac cat caa 198
Glu Leu Arg Tyr Ile Pro Ser Val Ala Thr His Ala Ser His His Gln
40 45 50

tcg ttt gac tta aac cag ccc gct gca gag gat gat aat gga gga gac 246
Ser Phe Asp Leu Asn Gln Pro Ala Ala Glu Asp Asp Asn Gly Gly Asp
55 60 65

aac aaa tca ctt ttg tgc aga atg caa aac cca ctt cgt cat ttc agt Asn Lys Ser Leu Leu Ser Arg Met Gln Asn Pro Leu Arg His Phe Ser 70 75 80	294
gcc tca tct gat tat aat tct tac gaa gat caa ggt tat gtt ctt gat Ala Ser Ser Asp Tyr Asn Ser Tyr Glu Asp Gln Gly Tyr Val Leu Asp 85 90 95 100	342
gag gat caa gat tat gct ctt gaa gaa gat gta cca tta ttt ctt gat Glu Asp Gln Asp Tyr Ala Leu Glu Glu Asp Val Pro Leu Phe Leu Asp 105 110 115	390
gaa gat gta cca tta tta cca agt gtc aag ctt cca att gtt gag aag Glu Asp Val Pro Leu Leu Pro Ser Val Lys Leu Pro Ile Val Glu Lys 120 125 130	438
cta cca cga tcc att aca tgg gtc ttc acc aaa agt agc cag ctg atg Leu Pro Arg Ser Ile Thr Trp Val Phe Thr Lys Ser Ser Gln Leu Met 135 140 145	486
gct gaa agt gat tct gtg att ggt aag aga caa atc tat tat ttg aat Ala Glu Ser Asp Ser Val Ile Gly Lys Arg Gln Ile Tyr Tyr Leu Asn 150 155 160	534
ggt gag gca cta gaa ttg agc agt gaa gaa gat gag gaa gat gaa gaa Gly Glu Ala Leu Glu Leu Ser Ser Glu Glu Asp Glu Glu Asp Glu Glu 165 170 175 180	582
gaa gat gag gaa gaa atc aag aaa gaa aaa tgc gaa ttt tct gaa gat Glu Asp Glu Glu Glu Ile Lys Lys Glu Lys Cys Glu Phe Ser Glu Asp 185 190 195	630
gta gac cga ttt ata tgg acg gtt ggg cag gac tat ggt ttg gat gat Val Asp Arg Phe Ile Trp Thr Val Gly Gln Asp Tyr Gly Leu Asp Asp 200 205 210	678
ctg gtc gtg cgg cgt gct ctc gcc aag tac ctc gaa gtg gat gtt tgc Leu Val Val Arg Arg Ala Leu Ala Lys Tyr Leu Glu Val Asp Val Ser 215 220 225	726
gac ata ttg gaa aga tac aat gaa ctc aag ctt aag aat gat gga act Asp Ile Leu Glu Arg Tyr Asn Glu Leu Lys Leu Lys Asn Asp Gly Thr 230 235 240	774
gct ggt gag gct tct gat ttg aca tcc aag aca ata act act gct ttc Ala Gly Glu Ala Ser Asp Leu Thr Ser Lys Thr Ile Thr Thr Ala Phe 245 250 255 260	822
cag gat ttt gct gat aga cgt cat tgc cgt cgt tgc atg ata ttc gat Gln Asp Phe Ala Asp Arg Arg His Cys Arg Arg Cys Met Ile Phe Asp 265 270 275	870
tgt cat atg cat gag aag tat gag ccc gag tct aga tcc agc gaa gac Cys His Met His Glu Lys Tyr Glu Pro Glu Ser Arg Ser Ser Glu Asp 280 285 290	918

aaa tct agt ttg ttt gag gat gaa gat aga caa cca tgc agt gag cat	966
Lys Ser Ser Leu Phe Glu Asp Glu Arg Gln Pro Cys Ser Glu His	
295 300 305	
tgt tac ctc aag gtg agg agt gtg aca gaa gct gat cat gtg atg gat	1014
Cys Tyr Leu Lys Val Arg Ser Val Thr Glu Ala Asp His Val Met Asp	
310 315 320	
aat gat aac tct ata tca aac aag att gtg gtc tca gat cca aac aac	1062
Asn Asp Asn Ser Ile Ser Asn Lys Ile Val Val Ser Asp Pro Asn Asn	
325 330 335 340	
act atg tgg acg cct gta gag aag gat ctt tac ttg aaa gga att gag	1110
Thr Met Trp Thr Pro Val Glu Lys Asp Leu Tyr Leu Lys Gly Ile Glu	
345 350 355	
ata ttt ggg aga aac agt tgt gat gtt gca tta aac ata ctt cgg ggg	1158
Ile Phe Gly Arg Asn Ser Cys Asp Val Ala Leu Asn Ile Leu Arg Gly	
360 365 370	
ctt aag acg tgc cta gag att tac aat tac atg cgc gaa caa gat caa	1206
Leu Lys Thr Cys Leu Glu Ile Tyr Asn Tyr Met Arg Glu Gln Asp Gln	
375 380 385	
tgt act atg tca tta gac ctt aac aaa act aca caa aga cac aat cag	1254
Cys Thr Met Ser Leu Asp Leu Asn Lys Thr Thr Arg His Asn Gln	
390 395 400	
gtt acc aaa aaa gta tct cga aaa agt agt agg tgc gtc cgc aaa aaa	1302
Val Thr Lys Lys Val Ser Arg Lys Ser Ser Arg Ser Val Arg Lys Lys	
405 410 415 420	
tgc aga ctc cga aaa tat gct cgt tat ccg cct gct tta aag aaa aca	1350
Ser Arg Leu Arg Lys Tyr Ala Arg Tyr Pro Pro Ala Leu Lys Lys Thr	
425 430 435	
act agt gga gaa gct aag ttt tat aag cac tac aca cca tgc act tgc	1398
Thr Ser Gly Glu Ala Lys Phe Tyr Lys His Tyr Thr Pro Cys Thr Cys	
440 445 450	
aag tca aaa tgt gga cag caa tgc cct tgt tta act cac gaa aat tgc	1446
Lys Ser Lys Cys Gly Gln Gln Cys Pro Cys Leu Thr His Glu Asn Cys	
455 460 465	
tgc gag aaa tat tgc ggg tgc tca aag gat tgc aac aat cgc ttt gga	1494
Cys Glu Lys Tyr Cys Gly Cys Ser Lys Asp Cys Asn Asn Arg Phe Gly	
470 475 480	
gga tgt aat tgt gca att ggc caa tgc aca aat cga caa tgt cct tgt	1542
Gly Cys Asn Cys Ala Ile Gly Gln Cys Thr Asn Arg Gln Cys Pro Cys	
485 490 495 500	
ttt gct gct aat cgt gaa tgc gat cca gat ctt tgt cgg agt tgt cct	1590
Phe Ala Ala Asn Arg Glu Cys Asp Pro Asp Leu Cys Arg Ser Cys Pro	
505 510 515	

ctt agc tgt gga gat ggc act ctt ggt gag aca cca gtg caa atc caa 1638
 Leu Ser Cys Gly Asp Gly Thr Leu Gly Glu Thr Pro Val Gln Ile Gln
 520 525 530

tgc aag aac atg caa ttc ctc ctt caa acc aat aaa aag att ctc att 1686
 Cys Lys Asn Met Gln Phe Leu Leu Gln Thr Asn Lys Lys Ile Leu Ile
 535 540 545

gga aag tct gat gtt cat gga tgg ggt gca ttt aca tgg gac tct ctt 1734
 Gly Lys Ser Asp Val His Gly Trp Gly Ala Phe Thr Trp Asp Ser Leu
 550 555 560

aaa aag aat gag tat ctc gga gaa tat act gga gaa ctg atc act cat 1782
 Lys Lys Asn Glu Tyr Leu Gly Glu Tyr Thr Gly Glu Leu Ile Thr His
 565 570 575 580

gat gaa gct aat gag cgt ggg aga ata gaa gat cgg att ggt tct tcc 1830
 Asp Glu Ala Asn Glu Arg Gly Arg Ile Glu Asp Arg Ile Gly Ser Ser
 585 590 595

tac ctc ttt acc ttg aat gat cag ctc gaa atc gat gct cgc cgt aaa 1878
 Tyr Leu Phe Thr Leu Asn Asp Gln Leu Glu Ile Asp Ala Arg Arg Lys
 600 605 610

gga aac gag ttc aaa ttt ctc aat cac tca gca aga cct aac tgc tac 1926
 Gly Asn Glu Phe Lys Phe Leu Asn His Ser Ala Arg Pro Asn Cys Tyr
 615 620 625

gcc aag ttg atg att gtg aga gga gat cag agg att ggt cta ttt gcg 1974
 Ala Lys Leu Met Ile Val Arg Gly Asp Gln Arg Ile Gly Leu Phe Ala
 630 635 640

gag aga gca atc gaa gaa ggt gag gag ctt ttc ttc gac tac tgc tat 2022
 Glu Arg Ala Ile Glu Glu Gly Glu Glu Leu Phe Phe Asp Tyr Cys Tyr
 645 650 655 660

gga cca gaa cat gcg gat tgg tcg cgt ggt cga gaa cct aga aag act 2070
 Gly Pro Glu His Ala Asp Trp Ser Arg Gly Arg Glu Pro Arg Lys Thr
 665 670 675

ggt gct tct aaa agg tct aag gaa gcc cgt cca gct cgt tagtttttga 2119
 Gly Ala Ser Lys Arg Ser Lys Glu Ala Arg Pro Ala Arg
 680 685

tctgaggaga agcagca 2136

<210> 2

<211> 689

<212> PRT

<213> Arabidopsis sp.

<400> 2

Met Glu Lys Glu Asn His Glu Asp Asp Gly Glu Gly Leu Pro Pro Glu

1

5

10

15

Leu Asn Gln Ile Lys Glu Gln Ile Glu Lys Glu Arg Phe Leu His Ile
 20 25 30
 Lys Arg Lys Phe Glu Leu Arg Tyr Ile Pro Ser Val Ala Thr His Ala
 35 40 45
 Ser His His Gln Ser Phe Asp Leu Asn Gln Pro Ala Ala Glu Asp Asp
 50 55 60
 Asn Gly Gly Asp Asn Lys Ser Leu Leu Ser Arg Met Gln Asn Pro Leu
 65 70 75 80
 Arg His Phe Ser Ala Ser Ser Asp Tyr Asn Ser Tyr Glu Asp Gln Gly
 85 90 95
 Tyr Val Leu Asp Glu Asp Gln Asp Tyr Ala Leu Glu Glu Asp Val Pro
 100 105 110
 Leu Phe Leu Asp Glu Asp Val Pro Leu Leu Pro Ser Val Lys Leu Pro
 115 120 125
 Ile Val Glu Lys Leu Pro Arg Ser Ile Thr Trp Val Phe Thr Lys Ser
 130 135 140
 Ser Gln Leu Met Ala Glu Ser Asp Ser Val Ile Gly Lys Arg Gln Ile
 145 150 155 160
 Tyr Tyr Leu Asn Gly Glu Ala Leu Glu Leu Ser Ser Glu Glu Asp Glu
 165 170 175
 Glu Asp Glu Glu Glu Asp Glu Glu Glu Ile Lys Lys Glu Lys Cys Glu
 180 185 190
 Phe Ser Glu Asp Val Asp Arg Phe Ile Trp Thr Val Gly Gln Asp Tyr
 195 200 205
 Gly Leu Asp Asp Leu Val Val Arg Arg Ala Leu Ala Lys Tyr Leu Glu
 210 215 220
 Val Asp Val Ser Asp Ile Leu Glu Arg Tyr Asn Glu Leu Lys Leu Lys
 225 230 235 240
 Asn Asp Gly Thr Ala Gly Glu Ala Ser Asp Leu Thr Ser Lys Thr Ile
 245 250 255
 Thr Thr Ala Phe Gln Asp Phe Ala Asp Arg Arg His Cys Arg Arg Cys
 260 265 270
 Met Ile Phe Asp Cys His Met His Glu Lys Tyr Glu Pro Glu Ser Arg
 275 280 285
 Ser Ser Glu Asp Lys Ser Ser Leu Phe Glu Asp Glu Asp Arg Gln Pro
 290 295 300
 Cys Ser Glu His Cys Tyr Leu Lys Val Arg Ser Val Thr Glu Ala Asp
 305 310 315 320

His Val Met Asp Asn Asp Asn Ser Ile Ser Asn Lys Ile Val Val Ser
 325 330 335
 Asp Pro Asn Asn Thr Met Trp Thr Pro Val Glu Lys Asp Leu Tyr Leu
 340 345 350
 Lys Gly Ile Glu Ile Phe Gly Arg Asn Ser Cys Asp Val Ala Leu Asn
 355 360 365
 Ile Leu Arg Gly Leu Lys Thr Cys Leu Glu Ile Tyr Asn Tyr Met Arg
 370 375 380
 Glu Gln Asp Gln Cys Thr Met Ser Leu Asp Leu Asn Lys Thr Thr Gln
 385 390 395 400
 Arg His Asn Gln Val Thr Lys Lys Val Ser Arg Lys Ser Ser Arg Ser
 405 410 415
 Val Arg Lys Lys Ser Arg Leu Arg Lys Tyr Ala Arg Tyr Pro Pro Ala
 420 425 430
 Leu Lys Lys Thr Thr Ser Gly Glu Ala Lys Phe Tyr Lys His Tyr Thr
 435 440 445
 Pro Cys Thr Cys Lys Ser Lys Cys Gly Gln Gln Cys Pro Cys Leu Thr
 450 455 460
 His Glu Asn Cys Cys Glu Lys Tyr Cys Gly Cys Ser Lys Asp Cys Asn
 465 470 475 480
 Asn Arg Phe Gly Gly Cys Asn Cys Ala Ile Gly Gln Cys Thr Asn Arg
 485 490 495
 Gln Cys Pro Cys Phe Ala Ala Asn Arg Glu Cys Asp Pro Asp Leu Cys
 500 505 510
 Arg Ser Cys Pro Leu Ser Cys Gly Asp Gly Thr Leu Gly Glu Thr Pro
 515 520 525
 Val Gln Ile Gln Cys Lys Asn Met Gln Phe Leu Leu Gln Thr Asn Lys
 530 535 540
 Lys Ile Leu Ile Gly Lys Ser Asp Val His Gly Trp Gly Ala Phe Thr
 545 550 555 560
 Trp Asp Ser Leu Lys Lys Asn Glu Tyr Leu Gly Glu Tyr Thr Gly Glu
 565 570 575
 Leu Ile Thr His Asp Glu Ala Asn Glu Arg Gly Arg Ile Glu Asp Arg
 580 585 590
 Ile Gly Ser Ser Tyr Leu Phe Thr Leu Asn Asp Gln Leu Glu Ile Asp
 595 600 605
 Ala Arg Arg Lys Gly Asn Glu Phe Lys Phe Leu Asn His Ser Ala Arg
 610 615 620

Pro Asn Cys Tyr Ala Lys Leu Met Ile Val Arg Gly Asp Gln Arg Ile
625 630 635 640

Gly Leu Phe Ala Glu Arg Ala Ile Glu Glu Gly Glu Glu Leu Phe Phe
645 650 655

Asp Tyr Cys Tyr Gly Pro Glu His Ala Asp Trp Ser Arg Gly Arg Glu
660 665 670

Pro Arg Lys Thr Gly Ala Ser Lys Arg Ser Lys Glu Ala Arg Pro Ala
675 680 685

Arg

<210> 3

<211> 1563

<212> DNA

<213> Arabidopsis sp.

<220>

<221> CDS

<222> (199)..(1308)

<223> fertilization-independent endosperm 3 (FIE3) cDNA

<400> 3

```

aaaggtgagt tgtgtgttgt gtcaggtcca aaataaaagt ttgtcgtgag gtcaaaatct 60
acggttacag taattttaat aacctgtgaa tctgtgtcta atcgaaaatt acaaaacacc 120
agttgttgtt gcatgagaga cttgtgagct tagattagtg tgcgagagtc agacagagag 180
agagatttcg aatattcga atg tcg aag ata acc tta ggg aac gag tca ata 231
          Met Ser Lys Ile Thr Leu Gly Asn Glu Ser Ile
          1              5              10

ggt ggg tct ttg act cca tcg aat aag aaa tcg tac aaa gtg acg aat 279
Val Gly Ser Leu Thr Pro Ser Asn Lys Lys Ser Tyr Lys Val Thr Asn
          15              20              25

agg att cag gaa ggg aag aaa cct ttg tat gct gtt gtt ttc aac ttc 327
Arg Ile Gln Glu Gly Lys Lys Pro Leu Tyr Ala Val Val Phe Asn Phe
          30              35              40

ctt gat gct cgt ttc ttc gat gtc ttc gtt acc gct ggt gga aat cgg 375
Leu Asp Ala Arg Phe Phe Asp Val Phe Val Thr Ala Gly Gly Asn Arg
          45              50              55

att act ctg tac aat tgt ctc gga gat ggt gcc ata tca gca ttg caa 423
Ile Thr Leu Tyr Asn Cys Leu Gly Asp Gly Ala Ile Ser Ala Leu Gln
          60              65              70              75

tcc tat gct gat gaa gat aag gaa gag tcg ttt tac acg gta agt tgg 471
Ser Tyr Ala Asp Glu Asp Lys Glu Glu Ser Phe Tyr Thr Val Ser Trp
          80              85              90

```

gcg tgt ggc gtt aat ggg aac cca tat gtt gcg gct gga gga gta aaa	519
Ala Cys Gly Val Asn Gly Asn Pro Tyr Val Ala Ala Gly Gly Val Lys	
95 100 105	
ggt ata atc cga gtc att gac gtc aac agt gaa acg att cat aag agt	567
Gly Ile Ile Arg Val Ile Asp Val Asn Ser Glu Thr Ile His Lys Ser	
110 115 120	
ctt gtg ggt cat gga gat tca gtg aac gaa atc agg aca caa cct tta	615
Leu Val Gly His Gly Asp Ser Val Asn Glu Ile Arg Thr Gln Pro Leu	
125 130 135	
aaa cct caa ctt gtg att act gct agc aag gat gaa tct gtt cgt ttg	663
Lys Pro Gln Leu Val Ile Thr Ala Ser Lys Asp Glu Ser Val Arg Leu	
140 145 150 155	
tgg aat gtt gaa act ggg ata tgt att ttg ata ttt gct gga gct gga	711
Trp Asn Val Glu Thr Gly Ile Cys Ile Leu Ile Phe Ala Gly Ala Gly	
160 165 170	
ggt cat cgc tat gaa gtt cta agt gtg gat ttt cat ccg tct gat att	759
Gly His Arg Tyr Glu Val Leu Ser Val Asp Phe His Pro Ser Asp Ile	
175 180 185	
tac cgc ttt gct agt tgt ggt atg gac acc act att aaa ata tgg tca	807
Tyr Arg Phe Ala Ser Cys Gly Met Asp Thr Thr Ile Lys Ile Trp Ser	
190 195 200	
atg aaa gag ttt tgg acg tac gtc gag aag tca ttc aca tgg act gat	855
Met Lys Glu Phe Trp Thr Tyr Val Glu Lys Ser Phe Thr Trp Thr Asp	
205 210 215	
gat cca tca aaa ttc ccc aca aaa ttt gtc caa ttc cct gta ttt aca	903
Asp Pro Ser Lys Phe Pro Thr Lys Phe Val Gln Phe Pro Val Phe Thr	
220 225 230 235	
gct tcc att cat aca aat tat gta gat tgt aac cgt tgg ttt ggt gat	951
Ala Ser Ile His Thr Asn Tyr Val Asp Cys Asn Arg Trp Phe Gly Asp	
240 245 250	
ttt atc ctc tca aag agt gtg gac aac gag atc ctg ttg tgg gaa cca	999
Phe Ile Leu Ser Lys Ser Val Asp Asn Glu Ile Leu Leu Trp Glu Pro	
255 260 265	
caa ctg aaa gag aat tct cct ggc gag gga gct tca gat gtt cta tta	1047
Gln Leu Lys Glu Asn Ser Pro Gly Glu Gly Ala Ser Asp Val Leu Leu	
270 275 280	
aga tac ccg gtt cca atg tgt gat att tgg ttt atc aag ttt tct tgt	1095
Arg Tyr Pro Val Pro Met Cys Asp Ile Trp Phe Ile Lys Phe Ser Cys	
285 290 295	
gac ctc cat tta agt tct gtt gcg ata ggt aat cag gaa gga aag gtt	1143
Asp Leu His Leu Ser Ser Val Ala Ile Gly Asn Gln Glu Gly Lys Val	
300 305 310 315	

tat gtc tgg gat ttg aaa agt tgc cct cct gtt ttg att aca aag tta 1191
Tyr Val Trp Asp Leu Lys Ser Cys Pro Pro Val Leu Ile Thr Lys Leu
320 325 330

tca cac aat caa tca aag tct gta atc agg caa aca gcc atg tct gtc 1239
Ser His Asn Gln Ser Lys Ser Val Ile Arg Gln Thr Ala Met Ser Val
335 340 345

gat gga agc acg att ctt gct tgc tgc gag gac ggg act ata tgg cgc 1287
Asp Gly Ser Thr Ile Leu Ala Cys Cys Glu Asp Gly Thr Ile Trp Arg
350 355 360

tgg gac gtg att acc aag tagcggctctg agtctttag gaattgatga 1335
Trp Asp Val Ile Thr Lys
365

attaggaatg cgaagaaatg agatatccat tcttttattg taattctgat catgttgcta 1395

ctccctgaga ccttgagatg ctctttgtag ccttgttaac gtccaccctt gtaccacagt 1455

qtataccctt tctggagatt ttgtcttatt ctcttagttc aatacacaag gctgtatcct 1515

ggagctttat tgcaggaacc actctctttc ataagctttc .tagtattc 1563

<210> 4

<211> 369

<212> PRT

<213> Arabidopsis sp.

<400> 4

Met Ser Lys Ile Thr Leu Gly Asn Glu Ser Ile Val Gly Ser Leu Thr
1 5 10 15

Pro Ser Asn Lys Lys Ser Tyr Lys Val Thr Asn Arg Ile Gln Glu Gly
20 25 30

Lys Lys Pro Leu Tyr Ala Val Val Phe Asn Phe Leu Asp Ala Arg Phe
35 40 45

Phe Asp Val Phe Val Thr Ala Gly Gly Asn Arg Ile Thr Leu Tyr Asn
50 55 60

Cys Leu Gly Asp Gly Ala Ile Ser Ala Leu Gln Ser Tyr Ala Asp Glu
65 70 75 80

Asp Lys Glu Glu Ser Phe Tyr Thr Val Ser Trp Ala Cys Gly Val Asn
85 90 95

Gly Asn Pro Tyr Val Ala Ala Gly Gly Val Lys Gly Ile Ile Arg Val
100 105 110

Ile Asp Val Asn Ser Glu Thr Ile His Lys Ser Leu Val Gly His Gly
115 120 125

Asp Ser Val Asn Glu Ile Arg Thr Gln Pro Leu Lys Pro Gln Leu Val
130 135 140

Ile Thr Ala Ser Lys Asp Glu Ser Val Arg Leu Trp Asn Val Glu Thr
 145 150 155 160
 Gly Ile Cys Ile Leu Ile Phe Ala Gly Ala Gly Gly His Arg Tyr Glu
 165 170 175
 Val Leu Ser Val Asp Phe His Pro Ser Asp Ile Tyr Arg Phe Ala Ser
 180 185 190
 Cys Gly Met Asp Thr Thr Ile Lys Ile Trp Ser Met Lys Glu Phe Trp
 195 200 205
 Thr Tyr Val Glu Lys Ser Phe Thr Trp Thr Asp Asp Pro Ser Lys Phe
 210 215 220
 Pro Thr Lys Phe Val Gln Phe Pro Val Phe Thr Ala Ser Ile His Thr
 225 230 235 240
 Asn Tyr Val Asp Cys Asn Arg Trp Phe Gly Asp Phe Ile Leu Ser Lys
 245 250 255
 Ser Val Asp Asn Glu Ile Leu Leu Trp Glu Pro Gln Leu Lys Glu Asn
 260 265 270
 Ser Pro Gly Glu Gly Ala Ser Asp Val Leu Leu Arg Tyr Pro Val Pro
 275 280 285
 Met Cys Asp Ile Trp Phe Ile Lys Phe Ser Cys Asp Leu His Leu Ser
 290 295 300
 Ser Val Ala Ile Gly Asn Gln Glu Gly Lys Val Tyr Val Trp Asp Leu
 305 310 315 320
 Lys Ser Cys Pro Pro Val Leu Ile Thr Lys Leu Ser His Asn Gln Ser
 325 330 335
 Lys Ser Val Ile Arg Gln Thr Ala Met Ser Val Asp Gly Ser Thr Ile
 340 345 350
 Leu Ala Cys Cys Glu Asp Gly Thr Ile Trp Arg Trp Asp Val Ile Thr
 355 360 365

Lys

<210> 5

<211> 5801

<212> DNA

<213> Arabidopsis sp.

<220>

<221> CDS

<222> (3872)..(5566)

<223> fertilization-independent endosperm 3 (FIE3)
 WD40/polycomb gene genomic sequence

<400> 5
 tctgaagcag ctaatcgatc cactaatctt gtggagatcg tgtgtgtctt tgggtgcatat 60
 atatacaaat agacaataac atatgctgtt acatatatat gtaagcacgt atttagagag 120
 caacaataag gcatgagaaa tgtgattatc gtcaaatcat gattgtctaca tgacaaatcg 180
 atcttaattt tgaanaagag acatttaaat attcaaaaaa cggtaaaaat ttctttaaga 240
 ccaaccatgg aaataacatg agaagactga gagggagatt agaacttaca acaagagaat 300
 ctttttctct caatatcttt tttaaacact tttcttttgt aggggaatttg ataatatgaa 360
 atggatagat ttactgtctt aatttttaat cattttttat cagaaacttt ttcgttttaa 420
 atctacggct agaattttcg gtcggtttta tactttatat agatgctaga ttttttctt 480
 ctatgcatcg tttattagta caattttggt ttatatattt gattacttga atttataata 540
 ggattggtac aaagggtgta attataaagt gcattttttt ggatattggt caattcaaat 600
 atttttactt agattctcaa actattgaaa aatatccaaa atatccggaa aatttcaatt 660
 taatcgaata aaaaaattag aatggaaaga ataaaaaatt atcgggtaca attagaagag 720
 taatgtgttt agtttggttt ttactcggat accagttcag ttttcacgta ttattcgatc 780
 ctataggagc aattgtgaat tagttgtgag attttgggag cattcgcttc cagaacttag 840
 tgctaggaga aatgctatct tctataaga gttgtacgag gaagcgagca agtacacaac 900
 aaccacaaaa gctttcaata ctgttttact cctaggggtt aaaactagag gttctataga 960
 tctctaaatt tttttgaaca aatgtgtttt ccacacgtga tattctacaa taccactcga 1020
 aaattatcca taattgcttt aaactatttt ttgttttaaa ttatataatt tgtaccgttg 1080
 taaactgatt atttcaaatt ataattaaag cactataatt tcatatatta cattcaacat 1140
 atattaaaat aaactataac catgtatttt ttgtcttcc tttcctataa acattgattg 1200
 gactctatcg taaattttgt cggtatcgca aattttgtcg ttatcgatga gtttctcaaa 1260
 gtttggaacct tgattatctt gtttgagat gttcaaatcg ttatatccaa atagtgaact 1320
 tctaattttc ttttttgata atgtgactta tttggaaaag tattccaaag tattcaaaata 1380
 aaccttttaa aaatccatta aatacatctt aaataagtaa aatgctctca acgaagagat 1440
 atcatggtaa ataacaacag tgagaggata aaatgttaaa tcaatttatt tacaacttca 1500
 aataggcgga catcaaact acttagcaca cttctatttt tcaaatgggt tatggtttgt 1560
 ctattagttg ttgcatctat gtttttaaat tcttatatcg gtgactctga tttgttttg 1620
 gtgtatctaa aatctatttt agttaagtg caagaaaata aaataaaaac ttaaggttaag 1680

agatgaaagt aagctttaaa taaaacagag cacttctatg gtcgattata gagccaagtt 1740
 cgttcctcca ttttggtcta atgcaatatt acaagtaaat cttataaaa tttccataag 1800
 tatcgtatta cccatggata ctatgatata taaactctcg gaggtgtagt ccagaagaaa 1860
 tgatccatat ttgcatacag taaacttgat ggaaaaaata tgtggtactg ttggaattgt 1920
 agctatttag tatcaaat tt gagaaaaagg taaaaaata tgtaaaattt ggggtgaaga 1980
 aaagaattac ataaaattga gaaatgtatg taattgacaa ataattgttt tcaaacata 2040
 aaaacgtgat accatttaaa tccaaacctt atatcattta accattttta gtaaaactaa 2100
 tagtaatgaa tggatcaata tataagatta catattaaat aattactact ttcagaaaat 2160
 ttcaatcaaa tctataatat tcctttgaaa aaaaagaaag acaaatagggt aaacttcgat 2220
 cgtatcaatc aaagaatata tttatttttc atcgtaacgt ttaattctaa gtccatttaa 2280
 aaaacgttaa atttgatttt tcttaccatt tttttctaaa aggtgagttg tgtgtgtgtg 2340
 cagggtccaa ataaaagttt gtcgtgaggt caaaatctac ggttacagta attttaataa 2400
 cctgtgaatc tgtgtctaat cgaaaattac aaaacaccag ttgtgtgtgc atgagagact 2460
 tgtgagctta gattagtgtg cgagagtcag acagagagag agatttcgaa tatcgaatgt 2520
 cgaagataac cttaggggac gagtcaatag ttgggtcttt gactccatcg aataagaaat 2580
 cgtacaaagt gacgaatagg attcaggaag ggaagaaacc tttgtatgct gttgttttca 2640
 acttccttga tgctcgtttc ttcatgtctc tcgttaccgc tgggtgaaat cgggtaaaag 2700
 atctcgactt tcaattcgaa atcaactgttt tcaattctgg gtctgtttag gttttgatcc 2760
 agattgattg taacattaag gcctttcctt ttgtgtttga ttttggtatc tgatttctag 2820
 ccttttagta gattaaaaga ttgaaacttt gcttgatgct atagtctaag attatgtaac 2880
 atttagttca aactttctgg ttttgagat tttgtggaag atatggtttt tgttttctaa 2940
 tttaaagtga actcattacc ttatacattt gatttgcatt ctgttctaaa aaaaattgaa 3000
 actttggttg atgttgttag tctgcttacc taaggagggt ccttttgaaa cgggtcatca 3060
 gtgagttatg aagcgttttag tttaagcttt cctgtattgg agattttgtg gaagtatttt 3120
 ttttttctaa ttttgaaact agatagagtg aagtcattac cttatacatt agactgtctc 3180
 attttgtttt caatgtgggt tccgaatgta cctgatagtg gctcttttag ctcatttgta 3240
 ttctgcgaaa catcgatcgg ataccggttt gggcttagta ggctctgata ccgcgtaaag 3300
 ttctcgggtt ccatgaaaaa ccaatcggtta atgagtgag ttaatttgta atcgtcttcg 3360
 gtcgagcatt tgggattagt gggctttgat accatgtgaa agtccttggt gtccaatcgg 3420

caatgagtag agttaacttg taatcttaca cacttggtta ggtctcattc tctttataat 3480
 gttgtgtgcc taacagtttc cgcactaagg ttgtttgggt gtcagtcctc aatataactta 3540
 tcttaactag ttgtagtttt ttctatcttt cctagtcttc gttggatttt aaattgaatg 3600
 atttactagt tagaaatatt tgagtttctc atagaagcct taaccaaggg gttctttcat 3660
 ttaaccttta cttagctagt tcatgaatct cattactgcc attggtgtat ctcttattat 3720
 gtagattact ctgtacaatt gtctcggaga tgggtgccata tcagcattgc aatcctatgc 3780
 tgatgaagat gtaaggaagc atacatatta gcttttccat caaattaaag taagtgatgt 3840
 ttcactgagg ccatttggtt atattttgtc tatgtcctct ggagagcaga aggaagagtc 3900
 gttttcacg gtaagttggg cgtgtggcgt taatgggaac ccatatgttg cggtggagg 3960
 agtaaaagggt ataatccgag tcattgacgt caacagtgaa acgattcata aggtattatt 4020
 gcatttttat ggatgttcta tgtatcctag caaatgattc tatatcttc ttgtataatc 4080
 tgtgctcgca aatgtgcaga gtctgtggg tcatggagat tcagtgaacg aaatcaggac 4140
 acaaccttta aaacctcaac ttgtgattac tgctagcaag gtatatctct tggttttctt 4200
 ttcttcttaa agtatcctga ctctcttttt atttgttggt gattaagagc tgttactgtt 4260
 taattgaata aggatgaatc tgttcgtttg tggaaatgtg aaactgggat atgtattttg 4320
 atatttgctg gagctggagg tcatcgctat gaagtcttaa gtgtggtgag ccaatattgt 4380
 tttatcta at tcagttagtt ttctacaata atatatagag acaatgttaa ggggaacat 4440
 cttattttga aaattgtagg attttcatcc gtctgatatt taccgctttg ctagtgtg 4500
 tatggacacc actattaaaa tatggtcaat gaaaggtacg atcgagcaca tattgtaata 4560
 aactccatt ttaaaaaaac ttttgagaaa aatggcttgt ggttcgtttg tatgatcttc 4620
 ttattctttg gctgtctata gagttttgga cgtacgtcga gaagtcattc acatggactg 4680
 atgatccatc aaaattcccc acaaaatttg tccaattccc tgtaagtatt ttgttttagc 4740
 cttgtcttgt aacaacaagt gacatacaaa tattggtgat ggcctttgta aataacatta 4800
 ctctatatg taggtattta cagcttccat tcatacaaat tatgtagatt gtaaccgttg 4860
 gtttggtgat tttatctctc caaagggttag taagtcaatg atggttaaga ttaattcatt 4920
 tgggtgactg ttaaaacact ttactcttgt gttgttctat cggatttttag agtgtggaca 4980
 acgagatcct gttgtgggaa ccacaactga aagagaattc tcttggcgag gttaggatct 5040
 cattgtgtct ccaaacacaa cataatcatt catttcatca catatattta cagttgaact 5100
 ttttggtgtt tgcagggagc ttcagatgtt ctattaagat acccggttcc aatgtgtgat 5160

atttggttta tcaagttttc ttgtgacctc catttaagtt ctgttgcgat aggtaatcag 5220
 agagctcggt agatacaaat ttgcattcta tagatagatt acttcaactt ttcttattca 5280
 tttttgtaca aattactcgc tggtttgtta tcaggtaatc aggaagggaa ggtttatgtc 5340
 tgggatttga aaagttgccc tctgtttttg attacaaagt aagtttagttt cggattcaga 5400
 tacaatgttt gatctttaag aaatgtttta gtcttgacat gattttctgt tgccatatag 5460
 gttatcacac aatcaatcaa agtctgtaat caggcaaaca gccatgtctg tcgatggaag 5520
 gtataaatcc atcttctctc tcaccaatgc agtgaaaatt tcttaatggt atttatgact 5580
 caatagttac tgtaaatcaa accaaacttt ggattctgac acactgtttc ttccatggga 5640
 ttgtagcacg attcttgctt gctgctgagga cgggactata tggcgctggg acgtgattac 5700
 caagtagcgg tctgagtcct gtaggaattg atgaattagg agtgcgaaga aatgagatat 5760
 ccattctttt attgtaattc tgatcatggt gctactccct g 5801

<210> 6

<211> 7015

<212> DNA

<213> Arabidopsis sp.

<220>

<221> CDS

<222> (1)..(7014)

<223> fertilization-independent endosperm 1 (FIE1)
SET/polycomb gene genomic sequence reading frame 1

<220>

<221> CDS

<222> (2)..(7015)

<223> fertilization-independent endosperm 1 (FIE1)
SET/polycomb gene genomic sequence reading frame 2

<220>

<221> CDS

<222> (3)..(7013)

<223> fertilization-independent endosperm 1 (FIE1)
SET/polycomb gene genomic sequence reading frame 3

<400> 6

gga tcc att att ttt aaa aat caa att ttt tca tat cta tta ttt gtt	48
Gly Ser Ile Ile Phe Lys Asn Gln Ile Phe Ser Tyr Leu Leu Phe Val	
1 5 10 15	
tca aag aaa aaa aca cac gac gat tat cca tct gcc ggc tgt gtt	96
Ser Lys Lys Lys Lys Thr His Asp Asp Tyr Pro Ser Ala Gly Cys Val	
20 25 30	

cat	cgg	taa	acc	tat	att	tta	aaa	ctg	gtg	ggc	ttt	tca	tta	cca	taa	144
His	Arg		Thr	Tyr	Ile	Leu	Lys	Leu	Val	Gly	Phe	Ser	Leu	Pro		
	35						40					45				
gtt	tgg	aca	tgt	ttt	tat	aat	ttg	atg	tat	agt	gta	gac	caa	aaa	ata	192
Val	Trp	Thr	Cys	Phe	Tyr	Asn	Leu	Met	Tyr	Ser	Val	Asp	Gln	Lys	Ile	
	50					55					60					
gag	aaa	taa	gaa	agg	gaa	cct	ttg	tgg	tga	ttg	taa	caa	aac	aga	aat	240
Glu	Lys		Glu	Arg	Glu	Pro	Leu	Trp		Leu		Gln	Asn	Arg	Asn	
	65				70					75					80	
cat	tat	att	gaa	tca	ttc	gaa	aag	acg	aaa	aga	tca	aac	ctt	tgt	agc	288
His	Tyr	Ile	Glu	Ser	Phe	Glu	Lys	Thr	Lys	Arg	Ser	Asn	Leu	Cys	Ser	
				85					90					95		
tag	atg	acc	ata	gac	gtg	gct	gcc	aat	tac	agt	ctt	aat	gct	ttt	ata	336
	Met	Thr	Ile	Asp	Val	Ala	Ala	Asn	Tyr	Ser	Leu	Asn	Ala	Phe	Ile	
				100				105					110			
tag	atc	ttt	ctt	aca	tcc	tct	gtt	cct	tca	cat	tca	aga	aac	agt	atc	384
	Ile	Phe	Leu	Thr	Ser	Ser	Val	Pro	Ser	His	Ser	Arg	Asn	Ser	Ile	
		115					120					125				
atc	cca	ttt	tct	ttc	ttc	ttc	tca	gtg	ttt	caa	tct	ttg	cga	att	aag	432
Ile	Pro	Phe	Ser	Phe	Phe	Phe	Ser	Val	Phe	Gln	Ser	Leu	Arg	Ile	Lys	
	130					135					140					
atg	gaa	cat	gaa	gaa	aca	caa	aag	aac	aca	aga	aac	agc	tgg	tcc	ctg	480
Met	Glu	His	Glu	Glu	Thr	Gln	Lys	Asn	Thr	Arg	Asn	Ser	Trp	Ser	Leu	
	145				150					155				160		
att	cga	cca	ttt	caa	atg	atc	tcc	att	agc	ttt	ctt	agc	ctc	ctc	ctc	528
Ile	Arg	Pro	Phe	Gln	Met	Ile	Ser	Ile	Ser	Phe	Leu	Ser	Leu	Leu	Leu	
				165					170					175		
cct	cta	tct	ttc	ctc	ttt	ctt	tca	cgt	ctc	tct	ctc	tat	acc	tcc	tca	576
Pro	Leu	Ser	Phe	Leu	Phe	Leu	Ser	Arg	Leu	Ser	Leu	Tyr	Thr	Ser	Ser	
			180					185					190			
act	ccg	gtc	acc	gtc	tcc	ggc	gtt	tcc	tct	gtt	att	cac	cag	gca	gat	624
Thr	Pro	Val	Thr	Val	Ser	Gly	Val	Ser	Ser	Val	Ile	His	Gln	Ala	Asp	
		195				200						205				
gtc	gga	ctc	tta	tac	acg	atc	ttg	ttt	ctc	atc	atc	gtc	ttc	act	tta	672
Val	Gly	Val	Leu	Tyr	Thr	Ile	Leu	Phe	Leu	Ile	Ile	Val	Phe	Thr	Leu	
	210					215					220					
atc	cac	agt	ctc	tca	gga	aaa	cca	gaa	tgc	tct	gtt	ctc	cat	tcc	cat	720
Ile	His	Ser	Leu	Ser	Gly	Lys	Pro	Glu	Cys	Ser	Val	Leu	His	Ser	His	
	225				230				235					240		
ctc	tac	atc	tgc	tgg	atc	gt										

ggg atc aaa aga acc atg agc acg acc atg tct ata aat cca gac aaa	816
Gly Ile Lys Arg Thr Met Ser Thr Thr Met Ser Ile Asn Pro Asp Lys	
260 265 270	
aac ttg ttt ctt gcg aca cat gaa aga tgg atg ttg gtt agg gtt ttg	864
Asn Leu Phe Leu Ala Thr His Glu Arg Trp Met Leu Val Arg Val Leu	
275 280 285	
ttc ttt ttg ggg cta cac gaa gtg atg ctg atg tgg ttt aga gtc gtg	912
Phe Phe Leu Gly Leu His Glu Val Met Leu Met Trp Phe Arg Val Val	
290 295 300	
gtt aag cct gtg gtt gac aac act ata tat ggg gtc tac gtg gag gag	960
Val Lys Pro Val Val Asp Asn Thr Ile Tyr Gly Val Tyr Val Glu Glu	
305 310 315 320	
agg tgg tcc gag aga gcc gtt gtg gca gtg acc ttt ggt ata atg tgg	1008
Arg Trp Ser Glu Arg Ala Val Val Ala Val Thr Phe Gly Ile Met Trp	
325 330 335	
tgg tgg agg cta aga gat gag gta gaa agt ctt gtg gtg gtg gtt acg	1056
Trp Trp Arg Leu Arg Asp Glu Val Glu Ser Leu Val Val Val Val Thr	
340 345 350	
gcg gat aga ctt aac ctc ccc att cgt ttg gag ggt ctc aat ttt gtg	1104
Ala Asp Arg Leu Asn Leu Pro Ile Arg Leu Glu Gly Leu Asn Phe Val	
355 360 365	
aac tgg tgt atg tat tac atc tgt gtt gga att ggt tta atg aag atc	1152
Asn Trp Cys Met Tyr Tyr Ile Cys Val Gly Ile Gly Leu Met Lys Ile	
370 375 380	
ttc aaa ggg ttt ttg gat ttt gtg aat acg ttg act ttg agc att aag	1200
Phe Lys Gly Phe Leu Asp Phe Val Asn Thr Leu Thr Leu Ser Ile Lys	
385 390 395 400	
agg tcg aga aaa ggc tgt gaa tca tgt gtt ttt gat gat atg tgt aat	1248
Arg Ser Arg Lys Gly Cys Glu Ser Cys Val Phe Asp Asp Met Cys Asn	
405 410 415	
gat gat cat gtg taa gat att tga cat att ata ctc atc tct tga atg	1296
Asp Asp His Val Asp Ile His Ile Ile Leu Ile Ser Met	
420 425 430	
ttt ttg aga ttt ttt tat ttt tat ttt cta ttt ctt gct agg aat tta	1344
Phe Leu Arg Phe Phe Tyr Phe Tyr Phe Leu Phe Leu Ala Arg Asn Leu	
435 440 445	
acc cgt ata tat gtc aca aaa ata gta gaa tat cag aaa gca aaa ata	1392
Thr Arg Ile Tyr Val Thr Lys Ile Val Glu Tyr Gln Lys Ala Lys Ile	
450 455 460	
ttt tat cta aaa ata acc att gaa cat taa ttt aag tct ttt tat aat	1440
Phe Tyr Leu Lys Ile Thr Ile Glu His Phe Lys Ser Phe Tyr Asn	
465 470 475 480	

tat att ttt ata aca cac cct ttt taa gaa aaa ctt gga gat tta att	1488
Tyr Ile Phe Ile Thr His Pro Phe Glu Lys Leu Gly Asp Leu Ile	
485 490 495	
aac gtt ata aat agt aaa aaa tat cgg att tac gta gaa gtt tta aat	1536
Asn Val Ile Asn Ser Lys Lys Tyr Arg Ile Tyr Val Glu Val Leu Asn	
500 505 510	
gcg tat aat taa att tac gaa ttg aat aat ata gcc ata tat ata ttt	1584
Ala Tyr Asn Ile Tyr Glu Leu Asn Asn Ile Ala Ile Tyr Ile Phe	
515 520 525	
ttg aag att taa act cat ttt gtt tct tcc ata tat gca taa tat ata	1632
Leu Lys Ile Thr His Phe Val Ser Ser Ile Tyr Ala Tyr Ile	
530 535 540	
agc tta aat aga aaa cta gct agg aat gaa tac taa tat ata taa tga	1680
Ser Leu Asn Arg Lys Leu Ala Arg Asn Glu Tyr Tyr Ile	
545 550 555 560	
cat taa tat aag tct tac cgg aca ctc caa aat gta tat att gat cta	1728
His Tyr Lys Ser Tyr Arg Thr Leu Gln Asn Val Tyr Ile Asp Leu	
565 570 575	
tca aca ttt ttt cat tgg ttt act aaa cca agt tgt cac ata aat atg	1776
Ser Thr Phe Phe His Trp Phe Thr Lys Pro Ser Cys His Ile Asn Met	
580 585 590	
agt taa cgc ctt ttt ttt tat aat att gta tat gaa ttt aaa ctt gag	1824
Ser Arg Leu Phe Phe Tyr Asn Ile Val Tyr Glu Phe Lys Leu Glu	
595 600 605	
ctg tca aac gtc aag caa acc caa cat cta cat aca tat agt act ata	1872
Leu Ser Asn Val Lys Gln Thr Gln His Leu His Thr Ser Thr Ile	
610 615 620	
ttt tga aaa tta aaa ttt tct taa att tcc cat att att ttc ctt tta	1920
Phe Lys Leu Lys Phe Ser Ile Ser His Ile Ile Phe Leu Leu	
625 630 635 640	
aag caa gca agt cca aat acg ttt ctt cca gat tat aat ttt cct taa	1968
Lys Gln Ala Ser Pro Asn Thr Phe Leu Pro Asp Tyr Asn Phe Pro	
645 650 655	
taa ggt ttt cta caa aaa aaa atc aac ttc tta ttt aaa aaa ccc ttt	2016
Gly Phe Leu Gln Lys Lys Ile Asn Phe Leu Phe Lys Pro Phe	
660 665 670	
gca tta tcc ttt tca cca aca tca gag aag acg aga aaa aaa gaa gag	2064
Ala Leu Ser Phe Ser Pro Thr Ser Glu Lys Thr Arg Lys Lys Glu Glu	
675 680 685	
gcg agt ggt taa tgg aga agg tta gtt tca ctc caa aca tat atg aat	2112
Ala Ser Gly Trp Arg Arg Leu Val Ser Leu Gln Thr Tyr Met Asn	
690 695 700	

tga cta ggt tat gaa atc cat ata ttt taa ttg tgt gtt tat gat aga	2160
Leu Gly Tyr Glu Ile His Ile Phe Leu Cys Val Tyr Asp Arg	
705 710 715 720	
tca ata aca ttt agg gtt gaa ttt tct tgt gat cta tta tgt tat tcg	2208
Ser Ile Thr Phe Arg Val Glu Phe Ser Cys Asp Leu Leu Cys Tyr Ser	
725 730 735	
tcc cat gca tga tcc ata aaa ctt tta ttt ttg aat ttg tct agg aaa	2256
Ser His Ala Ser Ile Lys Leu Leu Phe Leu Asn Leu Ser Arg Lys	
740 745 750	
acc atg agg acg atg gtg agg gtt tgc cac ccg aac taa atc aga taa	2304
Thr Met Arg Thr Met Val Arg Val Cys His Pro Asn Ile Arg	
755 760 765	
aag agc aaa tcg aaa agg aga gat ttc tgc ata tca agg taa gag aca	2352
Lys Ser Lys Ser Lys Arg Arg Asp Phe Cys Ile Ser Arg Glu Thr	
770 775 780	
ttt ggt tgc ttt aat att tta ttc tct tct gta tgt ttt tct gaa aat	2400
Phe Gly Cys Phe Asn Ile Leu Phe Ser Ser Val Cys Phe Ser Glu Asn	
785 790 795 800	
taa gga gag gag agg act taa tct cat aac tat acg att cca aag aga	2448
Gly Glu Glu Arg Thr Ser His Asn Tyr Thr Ile Pro Lys Arg	
805 810 815	
tgt taa gat aca tct aat aaa cag tta tac att agt cat aat ctt taa	2496
Cys Asp Thr Ser Asn Lys Gln Leu Tyr Ile Ser His Asn Leu	
820 825 830	
aac taa aaa gag aaa ttt cca aac ttt taa att aaa aac aga att tag	2544
Asn Lys Glu Lys Phe Pro Asn Phe Ile Lys Asn Arg Ile	
835 840 845	
aaa atg cca gcg aat cga taa cga cat cca gat ctg tcg ggt atc caa	2592
Lys Met Pro Ala Asn Arg Arg His Pro Asp Leu Ser Gly Ile Gln	
850 855 860	
aac tta gaa taa aaa aat aat taa tat att tat aat ata aag ctg gaa	2640
Asn Leu Glu Lys Asn Asn Tyr Ile Tyr Asn Ile Lys Leu Glu	
865 870 875 880	
ctt agg tta taa aat aaa att gaa aat aat agt aga ttt ttt tgt ttt	2688
Leu Arg Leu Asn Lys Ile Glu Asn Asn Ser Arg Phe Phe Cys Phe	
885 890 895	
tgt caa aca aaa tag taa tac aat ttg ttt ttt tta gta caa aga aac	2736
Cys Gln Thr Lys Tyr Asn Leu Phe Phe Leu Val Gln Arg Asn	
900 905 910	
taa ata ggt cca aat tgt ttt ttt ttt aac att cag cca aaa aag cca	2784
Ile Gly Pro Asn Cys Phe Phe Phe Asn Ile Gln Pro Lys Lys Pro	
915 920 925	

aga ttg atg cat ata tca aga aat cga aat caa aac ttt tgt att caa	2832
Arg Leu Met His Ile Ser Arg Asn Arg Asn Gln Asn Phe Cys Ile Gln	
930 935 940	
gta ttc tag ttt cac tat ata tag agt cca gtt tct gaa att taa aaa	2880
Val Phe Phe His Tyr Ile Ser Pro Val Ser Glu Ile Lys	
945 950 955 960	
atc att tac cta tat att act tga tta aca gag aaa att cga gct gag	2928
Ile Ile Tyr Leu Tyr Ile Thr Leu Thr Glu Lys Ile Arg Ala Glu	
965 970 975	
ata cat tcc aag tgt ggc tac tca tgc ttc aca cca tca atc gtt tga	2976
Ile His Ser Lys Cys Gly Tyr Ser Cys Phe Thr Pro Ser Ile Val	
980 985 990	
ctt aaa cca gcc cgc tgc aga gga tga taa tgg agg aga caa caa atc	3024
Leu Lys Pro Ala Arg Cys Arg Gly Trp Arg Arg Gln Gln Ile	
995 1000 1005	
act ttt gtc gag aat gca aaa ccc act tcg tca ttt cag tgc etc atc	3072
Thr Phe Val Glu Asn Ala Lys Pro Thr Ser Ser Phe Gln Cys Leu Ile	
1010 1015 1020	
tga tta taa ttc tta cga aga tca agg tta tgt tct tga tga gga tca	3120
Leu Phe Leu Arg Arg Ser Arg Leu Cys Ser Gly Ser	
1025 1030 1035 1040	
aga tta tgc tct tga aga aga tgt acc att att tct tga tga aga tgt	3168
Arg Leu Cys Ser Arg Arg Cys Thr Ile Ile Ser Arg Cys	
1045 1050 1055	
acc att att acc aag tgt caa gct tcc aat tgt tga gaa gct acc acg	3216
Thr Ile Ile Thr Lys Cys Gln Ala Ser Asn Cys Glu Ala Thr Thr	
1060 1065 1070	
atc cat tac atg ggt ctt cac caa aag gca tgt gtg ttt ttt gtt tcg	3264
Ile His Tyr Met Gly Leu His Gln Lys Ala Cys Val Phe Phe Val Ser	
1075 1080 1085	
tac tag ttt caa aat att aat cat ata cta tat agt aat cac tca tag	3312
Tyr Phe Gln Asn Ile Asn His Ile Leu Tyr Ser Asn His Ser	
1090 1095 1100	
tgc ata tat aca ttt ctt taa cat tgc agt agc cag ctg atg gct gaa	3360
Cys Ile Tyr Thr Phe Leu His Cys Ser Ser Gln Leu Met Ala Glu	
1105 1110 1115 1120	
agt gat tct gtg att ggt aag aga caa atc tat tat ttg aat ggt gag	3408
Ser Asp Ser Val Ile Gly Lys Arg Gln Ile Tyr Tyr Leu Asn Gly Glu	
1125 1130 1135	
gca cta gaa ttg agc agt gaa gaa gat gag gaa gat gaa gaa gaa gat	3456
Ala Leu Glu Leu Ser Ser Glu Glu Asp Glu Glu Asp Glu Glu Glu Asp	
1140 1145 1150	

gag gaa gaa atc aag aaa gaa aaa tgc gaa ttt tct gaa gat gta gac Glu Glu Glu Ile Lys Lys Glu Lys Cys Glu Phe Ser Glu Asp Val Asp 1155 1160 1165	3504
cga ttt ata tgg tta gtt ttt gca tta cat atg ttc ttg att att aat Arg Phe Ile Trp Leu Val Phe Ala Leu His Met Phe Leu Ile Ile Asn 1170 1175 1180	3552
ttg tag tcc ata ttt aat aaa ctg ctc aag aaa ttt tca gga cgg ttg Leu Ser Ile Phe Asn Lys Leu Leu Lys Lys Phe Ser Gly Arg Leu 1185 1190 1195 1200	3600
ggc agg act atg gtt tgg atg atc tgg tcg tgc ggc gtg ctc tcg cca Gly Arg Thr Met Val Trp Met Ile Trp Ser Cys Gly Val Leu Ser Pro 1205 1210 1215	3648
agt acc tcg aag tgg atg ttt cgg aca tat tgg taa caa tat tcg aat Ser Thr Ser Lys Trp Met Phe Arg Thr Tyr Trp Gln Tyr Ser Asn 1220 1225 1230	3696
aaa aac ttc ata cgt cga tca ata act ttc ctg ctt att taa ttt ttg Lys Asn Phe Ile Arg Arg Ser Ile Thr Phe Leu Leu Ile Phe Leu 1235 1240 1245	3744
ttg ttt ttc gtc gtg aga aat gtt tta aat ttt caa atc taa tgt agg Leu Phe Phe Val Val Arg Asn Val Leu Asn Phe Gln Ile Cys Arg 1250 1255 1260	3792
aaa gat aca atg aac tca agc tta aga atg atg gaa ctg ctg gtg agg Lys Asp Thr Met Asn Ser Ser Leu Arg Met Met Glu Leu Leu Val Arg 1265 1270 1275 1280	3840
ctt ctg att tga cat cca aga caa taa cta ctg ctt tcc agg att ttg Leu Leu Ile His Pro Arg Gln Leu Leu Leu Ser Arg Ile Leu 1285 1290 1295	3888
ctg ata gac gtc att gcc gtc gtt gca tgg taa ctt tga atc ttt ctt Leu Ile Asp Val Ile Ala Val Val Ala Trp Leu Ile Phe Leu 1300 1305 1310	3936
ttt taa ttt agc cac aaa aaa ggg aga tga tca tac atg ttt tta ttt Phe Phe Ser His Lys Lys Gly Arg Ser Tyr Met Phe Leu Phe 1315 1320 1325	3984
tat ttt atc att tgt ttt aca gat att cga ttg tca tat gca tga gaa Tyr Phe Ile Ile Cys Phe Thr Asp Ile Arg Leu Ser Tyr Ala Glu 1330 1335 1340	4032
gta tga gcc cga gtc tag atc cgt aag cat taa att cat tta aat tat Val Ala Arg Val Ile Arg Lys His Ile His Leu Asn Tyr 1345 1350 1355 1360	4080
ttt gtt agt ttc aca acc ctt ata tat aag gtt aag tga tta act taa Phe Val Ser Phe Thr Thr Leu Ile Tyr Lys Val Lys Leu Thr 1365 1370 1375	4128

tta gat tgc ttt ggc ttg tca gag cga aga caa atc tag ttt gtt tga	4176
Leu Asp Cys Phe Gly Leu Ser Glu Arg Arg Gln Ile Phe Val	
1380 1385 1390	
gga tga aga tag aca acc atg cag tga gca ttg tta cct caa ggt ctc	4224
Gly Arg Thr Thr Met Gln Ala Leu Leu Pro Gln Gly Leu	
1395 1400 1405	
tat ctc tct ccc tct ctc tct caa ttt ttt tgt cta ttc ctt aat tac	4272
Tyr Leu Ser Pro Ser Leu Ser Gln Phe Phe Cys Leu Phe Leu Asn Tyr	
1410 1415 1420	
ggt tat tag tta ctg gtt taa tat taa ata ggt gag gag tgt gac aga	4320
Val Tyr Leu Leu Val Tyr Ile Gly Glu Glu Cys Asp Arg	
1425 1430 1435 1440	
agc tga tca tgt gat gga taa tga taa ctc tat atc aaa caa gat tgt	4368
Ser Ser Cys Asp Gly Leu Tyr Ile Lys Gln Asp Cys	
1445 1450 1455	
ggt ctc aga tcc aaa caa cac tat gtg gac gcc tgt aga gaa gga tct	4416
Gly Leu Arg Ser Lys Gln His Tyr Val Asp Ala Cys Arg Glu Gly Ser	
1460 1465 1470	
tta ctt gaa agg aat tga gat att tgg gag aaa cag gta aaa aaa taa	4464
Leu Leu Glu Arg Asn Asp Ile Trp Glu Lys Gln Val Lys Lys	
1475 1480 1485	
aaa tag att taa tgc att aat ata tat act tac act gta ttc ctt gat	4512
Lys Ile Cys Ile Asn Ile Tyr Thr Tyr Thr Val Phe Leu Asp	
1490 1495 1500	
tat gct ggt tgc cag ttg tga tgt tgc att aaa cat act tgc ggg gct	4560
Tyr Ala Gly Ser Gln Leu Cys Cys Ile Lys His Thr Ser Gly Ala	
1505 1510 1515 1520	
taa gac gtg cct aga gat tta caa tta cat gcg cga aca aga tca atg	4608
Asp Val Pro Arg Asp Leu Gln Leu His Ala Arg Thr Arg Ser Met	
1525 1530 1535	
tac tat gtc att aga cct taa caa aac tac aca aag aca caa tca ggt	4656
Tyr Tyr Val Ile Arg Pro Gln Asn Tyr Thr Lys Thr Gln Ser Gly	
1540 1545 1550	
aca cta acc tat gtc gta att att ctc atg aca tgt atg tta aaa aca	4704
Thr Leu Thr Tyr Val Val Ile Ile Leu Met Thr Cys Met Leu Lys Thr	
1555 1560 1565	
cat gaa gtt tcc tat atg tgt tga tgg ttt tat cac agg tta cca aaa	4752
His Glu Val Ser Tyr Met Cys Trp Phe Tyr His Arg Leu Pro Lys	
1570 1575 1580	
aag tat ctc gaa aaa gta gta ggt cgg tcc gca aaa aat cga gac tcc	4800
Lys Tyr Leu Glu Lys Val Val Gly Arg Ser Ala Lys Asn Arg Asp Ser	
1585 1590 1595 1600	

gaa aat atg ctc gtt atc cgc ctg ctt taa aga aaa caa cta gtg gag	4848
Glu Asn Met Leu Val Ile Arg Leu Leu Arg Lys Gln Leu Val Glu	
1605 1610 1615	
aag cta agt ttt ata agc act aca cac cat gca ctt gca agt caa aat	4896
Lys Leu Ser Phe Ile Ser Thr Thr His His Ala Leu Ala Ser Gln Asn	
1620 1625 1630	
gtg gac agc aat gcc ctt gtt taa ctc acg aaa att gct gcg aga aat	4944
Val Asp Ser Asn Ala Leu Val Leu Thr Lys Ile Ala Ala Arg Asn	
1635 1640 1645	
att gcg ggt atg tca ttc aat ttt tcc taa gcc gga aga tcc atg aga	4992
Ile Ala Gly Met Ser Phe Asn Phe Ser Ala Gly Arg Ser Met Arg	
1650 1655 1660	
ttt aat ttg aac atg agt ttg tat ttt ttg ttc agg tgc tca aag gat	5040
Phe Asn Leu Asn Met Ser Leu Tyr Phe Leu Phe Arg Cys Ser Lys Asp	
1665 1670 1675 1680	
tgc aac aat cgc ttt gga gga tgt aat tgt gca att gcc caa tgc aca	5088
Cys Asn Asn Arg Phe Gly Gly Cys Asn Cys Ala Ile Gly Gln Cys Thr	
1685 1690 1695	
aat cga caa tgt cct tgt ttt gct gct aat cgt gaa tgc gat cca gat	5136
Asn Arg Gln Cys Pro Cys Phe Ala Ala Asn Arg Glu Cys Asp Pro Asp	
1700 1705 1710	
ctt tgt cgg agt tgt cct ctt agg taa cac ttt cac ttc aat atc tct	5184
Leu Cys Arg Ser Cys Pro Leu Arg His Phe His Phe Asn Ile Ser	
1715 1720 1725	
tta tac aaa ttc tat aat caa agt aat tca aac caa aag tct tat aaa	5232
Leu Tyr Lys Phe Tyr Asn Gln Ser Asn Ser Asn Gln Lys Ser Tyr Lys	
1730 1735 1740	
aaa aac ttt ata tat agc tgt gga gat gcc act ctt ggt gag aca cca	5280
Lys Asn Phe Ile Tyr Ser Cys Gly Asp Gly Thr Leu Gly Glu Thr Pro	
1745 1750 1755 1760	
gtg caa atc caa tgc aag aac atg caa ttc ctc ctt caa acc aat aaa	5328
Val Gln Ile Gln Cys Lys Asn Met Gln Phe Leu Leu Gln Thr Asn Lys	
1765 1770 1775	
aag gta atc aac gtc aaa tcc gta ccg aaa att taa aac taa tta tac	5376
Lys Val Ile Asn Val Lys Ser Val Pro Lys Ile Asn Leu Tyr	
1780 1785 1790	
gaa aga cat tta act atc att tcc cgt att tta cta gat tct cat tgg	5424
Glu Arg His Leu Thr Ile Ile Ser Arg Ile Leu Leu Asp Ser His Trp	
1795 1800 1805	
aaa gtc tga tgt tca tgg atg ggg tgc att tac atg ggt aag caa tca	5472
Lys Val Cys Ser Trp Met Gly Cys Ile Tyr Met Gly Lys Gln Ser	
1810 1815 1820	

tgt aaa tat aag aat aag ttt aat agt tat tgg tgc att cat aac act Cys Lys Tyr Lys Asn Lys Phe Asn Ser Tyr Trp Cys Ile His Asn Thr 1825 1830 1835 1840	5520
ttt ttt ttt tta ata atg ttt tat act tta gac cat taa ata tat tgt Phe Phe Phe Leu Ile Met Phe Tyr Thr Leu Asp His Ile Tyr Cys 1845 1850 1855	5568
gtg ata tgg ttt gac ccg tca gga ctc tct taa aaa gaa tga gta tct Val Ile Trp Phe Asp Pro Ser Gly Leu Ser Lys Glu Val Ser 1860 1865 1870	5616
cgg aga ata tac tgg aga act gat cac tca tga tga agc taa tga gcg Arg Arg Ile Tyr Trp Arg Thr Asp His Ser Ser Ala 1875 1880 1885	5664
tgg gag aat aga aga tcg gat tgg ttc ttc cta cct ctt tac ctt gaa Trp Glu Asn Arg Arg Ser Asp Trp Phe Phe Leu Pro Leu Tyr Leu Glu 1890 1895 1900	5712
tga tca ggt aac ttc aga ata att ttg aag taa cgt ttt aat cat tcg Ser Gly Asn Phe Arg Ile Ile Leu Lys Arg Phe Asn His Ser 1905 1910 1915 1920	5760
cgg gtt aca cat cta ttc gaa tca aag taa cat tta ttt tac agc tcg Arg Val Thr His Leu Phe Glu Ser Lys His Leu Phe Tyr Ser Ser 1925 1930 1935	5808
aaa tcg atg ctc gcc gta aag gaa acg agt tca aat ttc tca atc act Lys Ser Met Leu Ala Val Lys Glu Thr Ser Ser Asn Phe Ser Ile Thr 1940 1945 1950	5856
cag caa gac cta act gct acg cca agg tac taa gcc gtt ata ctt tat Gln Gln Asp Leu Thr Ala Thr Pro Arg Tyr Ala Val Ile Leu Tyr 1955 1960 1965	5904
ctt gaa caa ata cta aca tta tac aaa caa aaa tac tta tgt tag ttt Leu Glu Gln Ile Leu Thr Leu Tyr Lys Gln Tyr Leu Cys Phe 1970 1975 1980	5952
ctt tag tta aat cgt gta tca act tta ctc gtc gtt gat tgg ttt tca Leu Leu Asn Arg Val Ser Thr Leu Leu Val Asp Trp Phe Ser 1985 1990 1995 2000	6000
tat tga aga tat tcc aag aaa ctc aaa ctc att tta aat gat ttt ttc Tyr Arg Tyr Ser Lys Lys Leu Lys Leu Ile Leu Asn Asp Phe Phe 2005 2010 2015	6048
ttg tcg aga aaa ttt agg tta cga aaa ttt atg gtt tcg tgt gca gtt Leu Ser Arg Lys Phe Arg Leu Arg Lys Phe Met Val Ser Cys Ala Val 2020 2025 2030	6096
gat gat tgt gag agg aga tca gag gat tgg tct att tgc gga gag agc Asp Asp Cys Glu Arg Arg Ser Glu Asp Trp Ser Ile Cys Gly Glu Ser 2035 2040 2045	6144

aat cga aga agg tga gga gct ttt ctt cga cta ctg cta tgg acc aga	6192
Asn Arg Arg Arg Gly Ala Phe Leu Arg Leu Leu Leu Trp Thr Arg	
2050 2055 2060	
aca tgc gga ttg gtc gcg tgg tcg aga acc tag aaa gac tgg tgc ttc	6240
Thr Cys Gly Leu Val Ala Trp Ser Arg Thr Lys Asp Trp Cys Phe	
2065 2070 2075 2080	
taa aag gtc taa gga agc ccg tcc agc tcg tta gtt ttt gat ctg agg	6288
Lys Val Gly Ser Pro Ser Ser Ser Leu Val Phe Asp Leu Arg	
2085 2090 2095	
aga agc agc aat tca agc agt cct ttt ttt atg tta tgg tat atc aat	6336
Arg Ser Ser Asn Ser Ser Ser Pro Phe Phe Met Leu Trp Tyr Ile Asn	
2100 2105 2110	
taa taa tgt aat gct att ttg tgt tac taa acc aaa act taa gtt tct	6384
Cys Asn Ala Ile Leu Cys Tyr Thr Lys Thr Val Ser	
2115 2120 2125	
gtt tta ttt gtt tta ggg tgt ttt gtt tgt atc ata tgt gtc tta act	6432
Val Leu Phe Val Leu Gly Cys Phe Val Cys Ile Ile Cys Val Leu Thr	
2130 2135 2140	
ttc aaa gtt ttc ttt ttg tat ttc aat tta aaa aca atg ttt atg ttg	6480
Phe Lys Val Phe Phe Leu Tyr Phe Asn Leu Lys Thr Met Phe Met Leu	
2145 2150 2155 2160	
tta gtt tgc ata gac ctt tgg aaa aaa aaa gct ttg cac aac ttt aca	6528
Leu Val Cys Ile Asp Leu Trp Lys Lys Lys Ala Leu His Asn Phe Thr	
2165 2170 2175	
ttt att tag tct tca ttt agc gaa aaa tca cat aac aca agt ctg tgg	6576
Phe Ile Ser Ser Phe Ser Glu Lys Ser His Asn Thr Ser Leu Trp	
2180 2185 2190	
tac gta atg tac aaa aat gtc aaa ata atg ggt ttt atc att aaa aaa	6624
Tyr Val Met Tyr Lys Asn Val Lys Ile Met Gly Phe Ile Ile Lys Lys	
2195 2200 2205	
aaa tat tgg tta tga atg aag tat agt tag aat ttt agg tat tag ctc	6672
Lys Tyr Trp Leu Met Lys Tyr Ser Asn Phe Arg Tyr Leu	
2210 2215 2220	
gtt tgg ttt taa aac gtt ttt cga gat tta att ttg tag tct att gag	6720
Val Trp Phe Asn Val Phe Arg Asp Leu Ile Leu Ser Ile Glu	
2225 2230 2235 2240	
taa tac atg gaa gaa tca tca aca aag tgg ctg tag ctt acg aaa ggt	6768
Tyr Met Glu Glu Ser Ser Thr Lys Trp Leu Leu Thr Lys Gly	
2245 2250 2255	
ttt act tta atg taa ata tgt att tga tgc atc taa cat tta gta tct	6816
Phe Thr Leu Met Ile Cys Ile Cys Ile His Leu Val Ser	
2260 2265 2270	

aaa caa ata aaa aca aaa aaa aag aaa aaa gct ctt taa aat ccg aaa 6864
 Lys Gln Ile Lys Thr Lys Lys Lys Lys Lys Ala Leu Asn Pro Lys
 2275 2280 2285

 gta act att ttc aaa aaa tct aaa tta taa act taa atg ttt gga atc 6912
 Val Thr Ile Phe Lys Lys Ser Lys Leu Thr Met Phe Gly Ile
 2290 2295 2300

 gcg aac gac tat tgc taa ata taa atg cta aat ata cat gaa gat gtg 6960
 Ala Asn Asp Tyr Cys Ile Met Leu Asn Ile His Glu Asp Val
 2305 2310 2315 2320

 aaa aac atg ttg gat ttg tgg aat cgt taa tga cca cgg tta aat ggc 7008
 Lys Asn Met Leu Asp Leu Trp Asn Arg Pro Arg Leu Asn Gly
 2325 2330 2335

 ggg atc c 7015
 Gly Ile

<210> 7
 <211> 34
 <212> PRT
 <213> Arabidopsis sp.

<400> 7
 Gly Ser Ile Ile Phe Lys Asn Gln Ile Phe Ser Tyr Leu Leu Phe Val
 1 5 10 15

 Ser Lys Lys Lys Lys Thr His Asp Asp Tyr Pro Ser Ala Gly Cys Val
 20 25 30

His Arg

<210> 8
 <211> 12
 <212> PRT
 <213> Arabidopsis sp.

<400> 8
 Thr Tyr Ile Leu Lys Leu Val Gly Phe Ser Leu Pro
 1 5 10

<210> 9
 <211> 18
 <212> PRT
 <213> Arabidopsis sp.

<400> 9
 Val Trp Thr Cys Phe Tyr Asn Leu Met Tyr Ser Val Asp Gln Lys Ile
 1 5 10 15

Glu Lys

<210> 10
 <211> 6
 <212> PRT
 <213> Arabidopsis sp.

<400> 10
 Glu Arg Glu Pro Leu Trp
 1 5

<210> 11
 <211> 20
 <212> PRT
 <213> Arabidopsis sp.

<400> 11
 Gln Asn Arg Asn His Tyr Ile Glu Ser Phe Glu Lys Thr Lys Arg Ser
 1 5 10 15

Asn Leu Cys Ser
 20

<210> 12
 <211> 15
 <212> PRT
 <213> Arabidopsis sp.

<400> 12
 Met Thr Ile Asp Val Ala Ala Asn Tyr Ser Leu Asn Ala Phe Ile
 1 5 10 15

<210> 13
 <211> 307
 <212> PRT
 <213> Arabidopsis sp.

<400> 13
 Ile Phe Leu Thr Ser Ser Val Pro Ser His Ser Arg Asn Ser Ile Ile
 1 5 10 15

Pro Phe Ser Phe Phe Phe Ser Val Phe Gln Ser Leu Arg Ile Lys Met
 20 25 30

Glu His Glu Glu Thr Gln Lys Asn Thr Arg Asn Ser Trp Ser Leu Ile
 35 40 45

Arg Pro Phe Gln Met Ile Ser Ile Ser Phe Leu Ser Leu Leu Leu Pro
 50 55 60

Leu Ser Phe Leu Phe Leu Ser Arg Leu Ser Leu Tyr Thr Ser Ser Thr
 65 70 75 80

Pro Val Thr Val Ser Gly Val Ser Ser Val Ile His Gln Ala Asp Val
 85 90 95

Gly Val Leu Tyr Thr Ile Leu Phe Leu Ile Ile Val Phe Thr Leu Ile
100 105 110

His Ser Leu Ser Gly Lys Pro Glu Cys Ser Val Leu His Ser His Leu
115 120 125

Tyr Ile Cys Trp Ile Val Leu Phe Ile Ala Gln Ala Cys Ala Phe Gly
130 135 140

Ile Lys Arg Thr Met Ser Thr Thr Met Ser Ile Asn Pro Asp Lys Asn
145 150 155 160

Leu Phe Leu Ala Thr His Glu Arg Trp Met Leu Val Arg Val Leu Phe
165 170 175

Phe Leu Gly Leu His Glu Val Met Leu Met Trp Phe Arg Val Val Val
180 185 190

Lys Pro Val Val Asp Asn Thr Ile Tyr Gly Val Tyr Val Glu Glu Arg
195 200 205

Trp Ser Glu Arg Ala Val Val Ala Val Thr Phe Gly Ile Met Trp Trp
210 215 220

Trp Arg Leu Arg Asp Glu Val Glu Ser Leu Val Val Val Thr Ala
225 230 235 240

Asp Arg Leu Asn Leu Pro Ile Arg Leu Glu Gly Leu Asn Phe Val Asn
245 250 255

Trp Cys Met Tyr Tyr Ile Cys Val Gly Ile Gly Leu Met Lys Ile Phe
260 265 270

Lys Gly Phe Leu Asp Phe Val Asn Thr Leu Thr Leu Ser Ile Lys Arg
275 280 285

Ser Arg Lys Gly Cys Glu Ser Cys Val Phe Asp Asp Met Cys Asn Asp
290 295 300

Asp His Val
305

<210> 14

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 14

His Ile Ile Leu Ile Ser
1 5

<210> 15

<211> 42

<212> PRT

<213> Arabidopsis sp.

<400> 15

Met Phe Leu Arg Phe Phe Tyr Phe Tyr Phe Leu Phe Leu Ala Arg Asn
 1 5 10 15

Leu Thr Arg Ile Tyr Val Thr Lys Ile Val Glu Tyr Gln Lys Ala Lys
 20 25 30

Ile Phe Tyr Leu Lys Ile Thr Ile Glu His
 35 40

<210> 16

<211> 14

<212> PRT

<213> Arabidopsis sp.

<400> 16

Phe Lys Ser Phe Tyr Asn Tyr Ile Phe Ile Thr His Pro Phe
 1 5 10

<210> 17

<211> 26

<212> PRT

<213> Arabidopsis sp.

<400> 17

Glu Lys Leu Gly Asp Leu Ile Asn Val Ile Asn Ser Lys Lys Tyr Arg
 1 5 10 15

Ile Tyr Val Glu Val Leu Asn Ala Tyr Asn
 20 25

<210> 18

<211> 15

<212> PRT

<213> Arabidopsis sp..

<400> 18

Ile Tyr Glu Leu Asn Asn Ile Ala Ile Tyr Ile Phe Leu Lys Ile
 1 5 10 15

<210> 19

<211> 9

<212> PRT

<213> Arabidopsis sp.

<400> 19

Thr His Phe Val Ser Ser Ile Tyr Ala
 1 5

<210> 20
 <211> 13
 <212> PRT
 <213> Arabidopsis sp.

<400> 20
 Tyr Ile Ser Leu Asn Arg Lys Leu Ala Arg Asn Glu Tyr
 1 5 10

<210> 21
 <211> 31
 <212> PRT
 <213> Arabidopsis sp.

<400> 21
 Tyr Lys Ser Tyr Arg Thr Leu Gln Asn Val Tyr Ile Asp Leu Ser Thr
 1 5 10 15

Phe Phe His Trp Phe Thr Lys Pro Ser Cys His Ile Asn Met Ser
 20 25 30

<210> 22
 <211> 31
 <212> PRT
 <213> Arabidopsis sp.

<400> 22
 Arg Leu Phe Phe Tyr Asn Ile Val Tyr Glu Phe Lys Leu Glu Leu Ser
 1 5 10 15

Asn Val Lys Gln Thr Gln His Leu His Thr Tyr Ser Thr Ile Phe
 20 25 30

<210> 23
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.

<400> 23
 Lys Leu Lys Phe Ser
 1 5

<210> 24
 <211> 23
 <212> PRT
 <213> Arabidopsis sp.

<400> 24
 Ile Ser His Ile Ile Phe Leu Leu Lys Gln Ala Ser Pro Asn Thr Phe
 1 5 10 15

Leu Pro Asp Tyr Asn Phe Pro
 20

<210> 25
 <211> 34
 <212> PRT
 <213> Arabidopsis sp.

<400> 25
 Gly Phe Leu Gln Lys Lys Ile Asn Phe Leu Phe Lys Lys Pro Phe Ala
 1 5 10 15
 Leu Ser Phe Ser Pro Thr Ser Glu Lys Thr Arg Lys Lys Glu Glu Ala
 20 25 30

Ser Gly

<210> 26
 <211> 12
 <212> PRT
 <213> Arabidopsis sp.

<400> 26
 Trp Arg Arg Leu Val Ser Leu Gln Thr Tyr Met Asn
 1 5 10

<210> 27
 <211> 8
 <212> PRT
 <213> Arabidopsis sp.

<400> 27
 Leu Gly Tyr Glu Ile His Ile Phe
 1 5

<210> 28
 <211> 25
 <212> PRT
 <213> Arabidopsis sp.

<400> 28
 Leu Cys Val Tyr Asp Arg Ser Ile Thr Phe Arg Val Glu Phe Ser Cys
 1 5 10 15

Asp Leu Leu Cys Tyr Ser Ser His Ala
 20 25

<210> 29
 <211> 24
 <212> PRT
 <213> Arabidopsis sp.

<400> 29
 Ser Ile Lys Leu Leu Phe Leu Asn Leu Ser Arg Lys Thr Met Arg Thr
 1 5 10 15

Met Val Arg Val Cys His Pro Asn
20

<210> 30
<211> 13
<212> PRT
<213> Arabidopsis sp.

<400> 30
Lys Ser Lys Ser Lys Arg Arg Asp Phe Cys Ile Ser Arg
1 5 10

<210> 31
<211> 18
<212> PRT
<213> Arabidopsis sp.

<400> 31
Glu Thr Phe Gly Cys Phe Asn Ile Leu Phe Ser Ser Val Cys Phe Ser
1 5 10 15

Glu Asn

<210> 32
<211> 5
<212> PRT
<213> Arabidopsis sp.

<400> 32
Gly Glu Glu Arg Thr
1 5

<210> 33
<211> 10
<212> PRT
<213> Arabidopsis sp.

<400> 33
Ser His Asn Tyr Thr Ile Pro Lys Arg Cys
1 5 10

<210> 34
<211> 13
<212> PRT
<213> Arabidopsis sp.

<400> 34
Asp Thr Ser Asn Lys Gln Leu Tyr Ile Ser His Asn Leu
1 5 10

<210> 35
 <211> 7
 <212> PRT
 <213> Arabidopsis sp.

<400> 35
 Lys Glu Lys Phe Pro Asn Phe
 1 5

<210> 36
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.

<400> 36
 Ile Lys Asn Arg Ile
 1 5

<210> 37
 <211> 6
 <212> PRT
 <213> Arabidopsis sp.

<400> 37
 Lys Met Pro Ala Asn Arg
 1 5

<210> 38
 <211> 12
 <212> PRT
 <213> Arabidopsis sp.

<400> 38
 Arg His Pro Asp Leu Ser Gly Ile Gln Asn Leu Glu
 1 5 10

<210> 39
 <211> 11
 <212> PRT
 <213> Arabidopsis sp.

<400> 39
 Tyr Ile Tyr Asn Ile Lys Leu Glu Leu Arg Leu
 1 5 10

<210> 40
 <211> 16
 <212> PRT
 <213> Arabidopsis sp.

<400> 40

Asn Lys Ile Glu Asn Asn Ser Arg Phe Phe Cys Phe Cys Gln Thr Lys
 1 5 10 15

<210> 41

<211> 10

<212> PRT

<213> Arabidopsis sp.

<400> 41

Tyr Asn Leu Phe Phe Leu Val Gln Arg Asn
 1 5 10

<210> 42

<211> 33

<212> PRT

<213> Arabidopsis sp.

<400> 42

Ile Gly Pro Asn Cys Phe Phe Asn Ile Gln Pro Lys Lys Pro Arg
 1 5 10 15

Leu Met His Ile Ser Arg Asn Arg Asn Gln Asn Phe Cys Ile Gln Val
 20 25 30

Phe

<210> 43

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 43

Phe His Tyr Ile
 1

<210> 44

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 44

Ser Pro Val Ser Glu Ile
 1 5

<210> 45

<211> 8

<212> PRT

<213> Arabidopsis sp.

<400> 45

Lys Ile Ile Tyr Leu Tyr Ile Thr
1 5

<210> 46

<211> 23

<212> PRT

<213> Arabidopsis sp.

<400> 46

Leu Thr Glu Lys Ile Arg Ala Glu Ile His Ser Lys Cys Gly Tyr Ser
1 5 10 15

Cys Phe Thr Pro Ser Ile Val

20

<210> 47

<211> 8

<212> PRT

<213> Arabidopsis sp.

<400> 47

Leu Lys Pro Ala Arg Cys Arg Gly
1 5

<210> 48

<211> 22

<212> PRT

<213> Arabidopsis sp.

<400> 48

Trp Arg Arg Gln Gln Ile Thr Phe Val Glu Asn Ala Lys Pro Thr Ser
1 5 10 15

Ser Phe Gln Cys Leu Ile

20

<210> 49

<211> 9

<212> PRT

<213> Arabidopsis sp.

<400> 49

Phe Leu Arg Arg Ser Arg Leu Cys Ser
1 5

<210> 50

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 50
 Gly Ser Arg Leu Cys Ser
 1 5

<210> 51
 <211> 7
 <212> PRT
 <213> Arabidopsis sp.

<400> 51
 Arg Arg Cys Thr Ile Ile Ser
 1 5

<210> 52
 <211> 13
 <212> PRT
 <213> Arabidopsis sp.

<400> 52
 Arg Cys Thr Ile Ile Thr Lys Cys Gln Ala Ser Asn Cys
 1 5 10

<210> 53
 <211> 21
 <212> PRT
 <213> Arabidopsis sp.

<400> 53
 Glu Ala Thr Thr Ile His Tyr Met Gly Leu His Gln Lys Ala Cys Val
 1 5 10 15

Phe Phe Val Ser Tyr
 20

<210> 54
 <211> 13
 <212> PRT
 <213> Arabidopsis sp.

<400> 54
 Phe Gln Asn Ile Asn His Ile Leu Tyr Ser Asn His Ser
 1 5 10

<210> 55
 <211> 6
 <212> PRT
 <213> Arabidopsis sp.

<400> 55
 Cys Ile Tyr Thr Phe Leu
 1 5

<210> 56

<211> 74

<212> PRT

<213> Arabidopsis sp.

<400> 56

His Cys Ser Ser Gln Leu Met Ala Glu Ser Asp Ser Val Ile Gly Lys
 1 5 10 15

Arg Gln Ile Tyr Tyr Leu Asn Gly Glu Ala Leu Glu Leu Ser Ser Glu
 20 25 30

Glu Asp Glu Glu Asp Glu Glu Glu Asp Glu Glu Ile Lys Lys Glu
 35 40 45

Lys Cys Glu Phe Ser Glu Asp Val Asp Arg Phe Ile Trp Leu Val Phe
 50 55 60

Ala Leu His Met Phe Leu Ile Ile Asn Leu
 65 70

<210> 57

<211> 41

<212> PRT

<213> Arabidopsis sp.

<400> 57

Ser Ile Phe Asn Lys Leu Leu Lys Lys Phe Ser Gly Arg Leu Gly Arg
 1 5 10 15

Thr Met Val Trp Met Ile Trp Ser Cys Gly Val Leu Ser Pro Ser Thr
 20 25 30

Ser Lys Trp Met Phe Arg Thr Tyr Trp
 35 40

<210> 58

<211> 17

<212> PRT

<213> Arabidopsis sp.

<400> 58

Gln Tyr Ser Asn Lys Asn Phe Ile Arg Arg Ser Ile Thr Phe Leu Leu
 1 5 10 15

Ile

<210> 59

<211> 15

<212> PRT

<213> Arabidopsis sp.

<400> 59

Phe Leu Leu Phe Phe Val Val Arg Asn Val Leu Asn Phe Gln Ile
 1 5 10 15

<210> 60

<211> 21

<212> PRT

<213> Arabidopsis sp.

<400> 60

Cys Arg Lys Asp Thr Met Asn Ser Ser Leu Arg Met Met Glu Leu Leu
 1 5 10 15

Val Arg Leu Leu Ile

20

<210> 61

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 61

His Pro Arg Gln

1

<210> 62

<211> 17

<212> PRT

<213> Arabidopsis sp.

<400> 62

Leu Leu Leu Ser Arg Ile Leu Leu Ile Asp Val Ile Ala Val Val Ala
 1 5 10 15

Trp

<210> 63

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 63

Ile Phe Leu Phe

1

<210> 64

<211> 7

<212> PRT

<213> Arabidopsis sp.

<400> 64

Phe Ser His Lys Lys Gly Arg
1 5

<210> 65

<211> 20

<212> PRT

<213> Arabidopsis sp.

<400> 65

Ser Tyr Met Phe Leu Phe Tyr Phe Ile Ile Cys Phe Thr Asp Ile Arg
1 5 10 15

Leu Ser. Tyr Ala

20

<210> 66

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 66

Ile Arg Lys His
1

<210> 67

<211> 17

<212> PRT

<213> Arabidopsis sp.

<400> 67

Ile His Leu Asn Tyr Phe Val Ser Phe Thr Thr Leu Ile Tyr Lys Val
1 5 10 15

Lys

<210> 68

<211> 12

<212> PRT

<213> Arabidopsis sp.

<400> 68

Leu Asp Cys Phe Gly Leu Ser Glu Arg Arg Gln Ile
1 5 10

<210> 69

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 69

Thr Thr Met Gln

1

<210> 70

<211> 25

<212> PRT

<213> Arabidopsis sp.

<400> 70

Ala Leu Leu Pro Gln Gly Leu Tyr Leu Ser Pro Ser Leu Ser Gln Phe

1

5

10

15

Phe Cys Leu Phe Leu Asn Tyr Val Tyr

20

25

<210> 71

<211> 8

<212> PRT

<213> Arabidopsis sp.

<400> 71

Ile Gly Glu Glu Cys Asp Arg Ser

1

5

<210> 72

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 72

Ser Cys Asp Gly

1

<210> 73

<211> 28

<212> PRT

<213> Arabidopsis sp.

<400> 73

Leu Tyr Ile Lys Gln Asp Cys Gly Leu Arg Ser Lys Gln His Tyr Val

1

5

10

15

Asp Ala Cys Arg Glu Gly Ser Leu Leu Glu Arg Asn

20

25

<210> 74

<211> 9

<212> PRT

<213> Arabidopsis sp.

<400> 74

Asp Ile Trp Glu Lys Gln Val Lys Lys
1 5

<210> 75

<211> 18

<212> PRT

<213> Arabidopsis sp.

<400> 75

Cys Ile Asn Ile Tyr Thr Tyr Thr Val Phe Leu Asp Tyr Ala Gly Ser
1 5 10 15

Gln Leu

<210> 76

<211> 9

<212> PRT

<213> Arabidopsis sp.

<400> 76

Cys Cys Ile Lys His Thr Ser Gly Ala
1 5

<210> 77

<211> 21

<212> PRT

<213> Arabidopsis sp.

<400> 77

Asp Val Pro Arg Asp Leu Gln Leu His Ala Arg Thr Arg Ser Met Tyr
1 5 10 15Tyr Val Ile Arg Pro
20

<210> 78

<211> 32

<212> PRT

<213> Arabidopsis sp.

<400> 78

Gln Asn Tyr Thr Lys Thr Gln Ser Gly Thr Leu Thr Tyr Val Val Ile
1 5 10 15Ile Leu Met Thr Cys Met Leu Lys Thr His Glu Val Ser Tyr Met Cys
20 25 30

<210> 79

<211> 33

<212> PRT

<213> Arabidopsis sp.

<400> 79

Trp Phe Tyr His Arg Leu Pro Lys Lys Tyr Leu Glu Lys Val Val Gly
 1 5 10 15

Arg Ser Ala Lys Asn Arg Asp Ser Glu Asn Met Leu Val Ile Arg Leu
 20 25 30

Leu

<210> 80

<211> 29

<212> PRT

<213> Arabidopsis sp.

<400> 80

Arg Lys Gln Leu Val Glu Lys Leu Ser Phe Ile Ser Thr Thr His His
 1 5 10 15

Ala Leu Ala Ser Gln Asn Val Asp Ser Asn Ala Leu Val
 20 25

<210> 81

<211> 17

<212> PRT

<213> Arabidopsis sp.

<400> 81

Leu Thr Lys Ile Ala Ala Arg Asn Ile Ala Gly Met Ser Phe Asn Phe
 1 5 10 15

Ser

<210> 82

<211> 62

<212> PRT

<213> Arabidopsis sp.

<400> 82

Ala Gly Arg Ser Met Arg Phe Asn Leu Asn Met Ser Leu Tyr Phe Leu
 1 5 10 15

Phe Arg Cys Ser Lys Asp Cys Asn Asn Arg Phe Gly Gly Cys Asn Cys
 20 25 30

Ala Ile Gly Gln Cys Thr Asn Arg Gln Cys Pro Cys Phe Ala Ala Asn
 35 40 45

Arg Glu Cys Asp Pro Asp Leu Cys Arg Ser Cys Pro Leu Arg
 50 55 60

<210> 83
 <211> 66
 <212> PRT
 <213> Arabidopsis sp.

<400> 83
 His Phe His Phe Asn Ile Ser Leu Tyr Lys Phe Tyr Asn Gln Ser Asn
 1 5 10 15
 Ser Asn Gln Lys Ser Tyr Lys Lys Asn Phe Ile Tyr Ser Cys Gly Asp
 20 25 30
 Gly Thr Leu Gly Glu Thr Pro Val Gln Ile Gln Cys Lys Asn Met Gln
 35 40 45
 Phe Leu Leu Gln Thr Asn Lys Lys Val Ile Asn Val Lys Ser Val Pro
 50 55 60
 Lys Ile
 65

<210> 84
 <211> 20
 <212> PRT
 <213> Arabidopsis sp.

<400> 84
 Leu Tyr Glu Arg His Leu Thr Ile Ile Ser Arg Ile Leu Leu Asp Ser
 1 5 10 15
 His Trp Lys Val
 20

<210> 85
 <211> 41
 <212> PRT
 <213> Arabidopsis sp.

<400> 85
 Cys Ser Trp Met Gly Cys Ile Tyr Met Gly Lys Gln Ser Cys Lys Tyr
 1 5 10 15
 Lys Asn Lys Phe Asn Ser Tyr Trp Cys Ile His Asn Thr Phe Phe Phe
 20 25 30
 Leu Ile Met Phe Tyr Thr Leu Asp His
 35 40

<210> 86
 <211> 13
 <212> PRT
 <213> Arabidopsis sp.

<400> 86

Ile Tyr Cys Val Ile Trp Phe Asp Pro Ser Gly Leu Ser
 1 5 10

<210> 87

<211> 12

<212> PRT

<213> Arabidopsis sp.

<400> 87

Val Ser Arg Arg Ile Tyr Trp Arg Thr Asp His Ser
 1 5 10

<210> 88

<211> 17

<212> PRT

<213> Arabidopsis sp.

<400> 88

Ala Trp Glu Asn Arg Arg Ser Asp Trp Phe Phe Leu Pro Leu Tyr Leu
 1 5 10 15

Glu

<210> 89

<211> 9

<212> PRT

<213> Arabidopsis sp.

<400> 89

Ser Gly Asn Phe Arg Ile Ile Leu Lys
 1 5

<210> 90

<211> 14

<212> PRT

<213> Arabidopsis sp.

<400> 90

Arg Phe Asn His Ser Arg Val Thr His Leu Phe Glu Ser Lys
 1 5 10

<210> 91

<211> 32

<212> PRT

<213> Arabidopsis sp.

<400> 91

His Leu Phe Tyr Ser Ser Lys Ser Met Leu Ala Val Lys Glu Thr Ser
 1 5 10 15

Ser Asn Phe Ser Ile Thr Gln Gln Asp Leu Thr Ala Thr Pro Arg Tyr
 20 25 30

<210> 92

<211> 19

<212> PRT

<213> Arabidopsis sp.

<400> 92

Ala Val Ile Leu Tyr Leu Glu Gln Ile Leu Thr Leu Tyr Lys Gln Lys
 1 5 10 15

Tyr Leu Cys

<210> 93

<211> 15

<212> PRT

<213> Arabidopsis sp.

<400> 93

Leu Asn Arg Val Ser Thr Leu Leu Val Val Asp Trp Phe Ser Tyr
 1 5 10 15

<210> 94

<211> 50

<212> PRT

<213> Arabidopsis sp.

<400> 94

Arg Tyr Ser Lys Lys Leu Lys Leu Ile Leu Asn Asp Phe Phe Leu Ser
 1 5 10 15

Arg Lys Phe Arg Leu Arg Lys Phe Met Val Ser Cys Ala Val Asp Asp
 20 25 30

Cys Glu Arg Arg Ser Glu Asp Trp Ser Ile Cys Gly Glu Ser Asn Arg
 35 40 45

Arg Arg
 50

<210> 95

<211> 21

<212> PRT

<213> Arabidopsis sp.

<400> 95

Gly Ala Phe Leu Arg Leu Leu Leu Trp Thr Arg Thr Cys Gly Leu Val
 1 5 10 15

Ala Trp Ser Arg Thr
 20

<210> 96
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.

<400> 96
 Lys Asp Trp Cys Phe
 1 5

<210> 97
 <211> 28
 <212> PRT
 <213> Arabidopsis sp.

<400> 97
 Gly Ser Pro Ser Ser Ser Leu Val Phe Asp Leu Arg Arg Ser Ser Asn
 1 5 10 15

Ser Ser Ser Pro Phe Phe Met Leu Trp Tyr Ile Asn
 20 25

<210> 98
 <211> 7
 <212> PRT
 <213> Arabidopsis sp.

<400> 98
 Cys Asn Ala Ile Leu Cys Tyr
 1 5

<210> 99
 <211> 52
 <212> PRT
 <213> Arabidopsis sp.

<400> 99
 Val Ser Val Leu Phe Val Leu Gly Cys Phe Val Cys Ile Ile Cys Val
 1 5 10 15

Leu Thr Phe Lys Val Phe Phe Leu Tyr Phe Asn Leu Lys Thr Met Phe
 20 25 30

Met Leu Leu Val Cys Ile Asp Leu Trp Lys Lys Lys Ala Leu His Asn
 35 40 45

Phe Thr Phe Ile
 50

<210> 100
 <211> 33
 <212> PRT
 <213> Arabidopsis sp.

<400> 100

Ser	Ser	Phe	Ser	Glu	Lys	Ser	His	Asn	Thr	Ser	Leu	Trp	Tyr	Val	Met
1				5					10					15	

Tyr	Lys	Asn	Val	Lys	Ile	Met	Gly	Phe	Ile	Ile	Lys	Lys	Lys	Tyr	Trp
		20						25					30		

Leu

<210> 101

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 101

Met Lys Tyr Ser

1

<210> 102

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 102

Asn Phe Arg Tyr

1

<210> 103

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 103

Leu Val Trp Phe

1

<210> 104

<211> 8

<212> PRT

<213> Arabidopsis sp.

<400> 104

Asn Val Phe Arg Asp Leu Ile Leu

1

5

<210> 105

<211> 10

<212> PRT

<213> Arabidopsis sp.

<400> 105

Tyr Met Glu Glu Ser Ser Thr Lys Trp Leu
1 5 10

<210> 106

<211> 8

<212> PRT

<213> Arabidopsis sp.

<400> 106

Leu Thr Lys Gly Phe Thr Leu Met
1 5

<210> 107

<211> 16

<212> PRT

<213> Arabidopsis sp.

<400> 107

His Leu Val Ser Lys Gln Ile Lys Thr Lys Lys Lys Lys Lys Ala Leu
1 5 10 15

<210> 108

<211> 12

<212> PRT

<213> Arabidopsis sp.

<400> 108

Asn Pro Lys Val Thr Ile Phe Lys Lys Ser Lys Leu
1 5 10

<210> 109

<211> 9

<212> PRT

<213> Arabidopsis sp.

<400> 109

Met Phe Gly Ile Ala Asn Asp Tyr Cys
1 5

<210> 110

<211> 17

<212> PRT

<213> Arabidopsis sp.

<400> 110

Met Leu Asn Ile His Glu Asp Val Lys Asn Met Leu Asp Leu Trp Asn
1 5 10 15

Arg

<210> 111
 <211> 7
 <212> PRT
 <213> Arabidopsis sp.

<400> 111
 Pro Arg Leu Asn Gly Gly Ile
 1 5

<210> 112
 <211> 38
 <212> PRT
 <213> Arabidopsis sp.

<400> 112
 Asp Pro Leu Phe Leu Lys Ile Lys Phe Phe His Ile Tyr Tyr Leu Phe
 1 5 10 15

Gln Arg Lys Lys Lys His Thr Thr Ile Ile His Leu Pro Ala Val Phe
 20 25 30

Ile Gly Lys Pro Ile Phe
 35

<210> 113
 <211> 16
 <212> PRT
 <213> Arabidopsis sp.

<400> 113
 Asn Trp Trp Ala Phe His Tyr His Lys Phe Gly His Val Phe Ile Ile
 1 5 10 15

<210> 114
 <211> 33
 <212> PRT
 <213> Arabidopsis sp.

<400> 114
 Arg Asn Lys Lys Gly Asn Leu Cys Gly Asp Cys Asn Lys Thr Glu Ile
 1 5 10 15

Ile Ile Leu Asn His Ser Lys Arg Arg Lys Asp Gln Thr Phe Val Ala
 20 25 30

Arg

<210> 115
 <211> 59
 <212> PRT
 <213> Arabidopsis sp.

<400> 115

Thr Trp Leu Pro Ile Thr Val Leu Met Leu Leu Tyr Arg Ser Phe Leu
 1 5 10 15

His Pro Leu Phe Leu His Ile Gln Glu Thr Val Ser Ser His Phe Leu
 20 25 30

Ser Ser Ser Gln Cys Phe Asn Leu Cys Glu Leu Arg Trp Asn Met Lys
 35 40 45

Lys His Lys Arg Thr Gln Glu Thr Ala Gly Pro
 50 55

<210> 116

<211> 5

<212> PRT

<213> Arabidopsis sp.

<400> 116

Phe Asp His Phe Lys
 1 5

<210> 117

<211> 57

<212> PRT

<213> Arabidopsis sp.

<400> 117

Ser Pro Leu Ala Phe Leu Ala Ser Ser Ser Leu Tyr Leu Ser Ser Phe
 1 5 10 15

Phe His Val Ser Leu Ser Ile Pro Pro Gln Leu Arg Ser Pro Ser Pro
 20 25 30

Ala Phe Pro Leu Leu Phe Thr Arg Gln Met Ser Glu Ser Tyr Thr Arg
 35 40 45

Ser Cys Phe Ser Ser Ser Ser Ser Leu
 50 55

<210> 118

<211> 37

<212> PRT

<213> Arabidopsis sp.

<400> 118

Ser Thr Val Ser Gln Glu Asn Gln Asn Ala Leu Phe Ser Ile Pro Ile
 1 5 10 15

Ser Thr Ser Ala Gly Ser Phe Ser Ser Ser Pro Lys Leu Val Pro Leu
 20 25 30

Gly Ser Lys Glu Pro
 35

<210> 119
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.

<400> 119
 Ala Arg Pro Cys Leu
 1 5

<210> 120
 <211> 27
 <212> PRT
 <213> Arabidopsis sp.

<400> 120
 Ile Gln Thr Lys Thr Cys Phe Leu Arg His Met Lys Asp Gly Cys Trp
 1 5 10 15
 Leu Gly Phe Cys Ser Phe Trp Gly Tyr Thr Lys
 20 25

<210> 121
 <211> 31
 <212> PRT
 <213> Arabidopsis sp.

<400> 121
 Cys Gly Leu Glu Ser Trp Leu Ser Leu Trp Leu Thr Thr Leu Tyr Met
 1 5 10 15
 Gly Ser Thr Trp Arg Arg Gly Gly Pro Arg Glu Pro Leu Trp Gln
 20 25 30

<210> 122
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.

<400> 122
 Cys Gly Gly Gly Gly
 1 5

<210> 123
 <211> 23
 <212> PRT
 <213> Arabidopsis sp.

<400> 123
 Lys Val Leu Trp Trp Trp Leu Arg Arg Ile Asp Leu Thr Ser Pro Phe
 1 5 10 15

Val Trp Arg Val Ser Ile Leu
 20

<210> 124
 <211> 12
 <212> PRT
 <213> Arabidopsis sp.

<400> 124
 Thr Gly Val Cys Ile Thr Ser Val Leu Glu Leu Val
 1 5 10

<210> 125
 <211> 9
 <212> PRT
 <213> Arabidopsis sp.

<400> 125
 Arg Ser Ser Lys Gly Phe Trp Ile Leu
 1 5

<210> 126
 <211> 36
 <212> PRT
 <213> Arabidopsis sp.

<400> 126
 Ala Leu Arg Gly Arg Glu Lys Ala Val Asn His Val Phe Leu Met Ile
 1 5 10 15

Cys Val Met Met Ile Met Cys Lys Ile Phe Asp Ile Leu Tyr Ser Ser
 20 25 30

Leu Glu Cys Phe
 35

<210> 127
 <211> 13
 <212> PRT
 <213> Arabidopsis sp.

<400> 127
 Asp Phe Phe Ile Phe Ile Phe Tyr Phe Leu Leu Gly Ile
 1 5 10

<210> 128
 <211> 7
 <212> PRT
 <213> Arabidopsis sp.

<400> 128
 Pro Val Tyr Met Ser Gln Lys
 1 5

<210> 129
 <211> 9
 <212> PRT
 <213> Arabidopsis sp.

<400> 129
 Asn Ile Arg Lys Gln Lys Tyr Phe Ile
 1 5

<210> 130
 <211> 14
 <212> PRT
 <213> Arabidopsis sp.

<400> 130
 Pro Leu Asn Ile Asn Leu Ser Leu Phe Ile Ile Ile Phe Leu
 1 5 10

<210> 131
 <211> 10
 <212> PRT
 <213> Arabidopsis sp.

<400> 131
 His Thr Leu Phe Lys Lys Asn Leu Glu Ile
 1 5 10

<210> 132
 <211> 8
 <212> PRT
 <213> Arabidopsis sp.

<400> 132
 Ile Val Lys Asn Ile Gly Phe Thr
 1 5

<210> 133
 <211> 8
 <212> PRT
 <213> Arabidopsis sp.

<400> 133
 Met Arg Ile Ile Lys Phe Thr Asn
 1 5

<210> 134
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.

<400> 134

Pro Tyr Ile Tyr Phe
1 5

<210> 135

<211> 14

<212> PRT

<213> Arabidopsis sp.

<400> 135

Arg Phe Lys Leu Ile Leu Phe Leu Pro Tyr Met His Asn Ile
1 5 10

<210> 136

<211> 39

<212> PRT

<213> Arabidopsis sp.

<400> 136

Leu Gly Met Asn Thr Asn Ile Tyr Asn Asp Ile Asn Ile Ser Leu Thr
1 5 10 15Gly His Ser Lys Met Tyr Ile Leu Ile Tyr Gln His Phe Phe Ile Gly
20 25 30Leu Leu Asn Gln Val Val Thr
35

<210> 137

<211> 35

<212> PRT

<213> Arabidopsis sp.

<400> 137

Val Asn Ala Phe Phe Phe Ile Ile Leu Tyr Met Asn Leu Asn Leu Ser
1 5 10 15Cys Gln Thr Ser Ser Lys Pro Asn Ile Tyr Ile His Ile Val Leu Tyr
20 25 30Phe Glu Asn
35

<210> 138

<211> 11

<212> PRT

<213> Arabidopsis sp.

<400> 138

Asn Phe Leu Lys Phe Pro Ile Leu Phe Ser Phe
1 5 10

<210> 139

<211> 55

<212> PRT

<213> Arabidopsis sp.

<400> 139

Ser Lys Gln Val Gln Ile Arg Phe Phe Gln Ile Ile Ile Phe Leu Asn
 1 5 10 15

Lys Val Phe Tyr Lys Lys Lys Ser Thr Ser Tyr Leu Lys Asn Pro Leu
 20 25 30

His Tyr Pro Phe His Gln His Gln Arg Arg Arg Glu Lys Lys Arg
 35 40 45

Arg Val Val Asn Gly Glu Gly
 50 55

<210> 140

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 140

Phe His Ser Lys His Ile
 1 5

<210> 141

<211> 15

<212> PRT

<213> Arabidopsis sp.

<400> 141

Val Met Lys Ser Ile Tyr Phe Asn Cys Val Phe Met Ile Asp Gln
 1 5 10 15

<210> 142

<211> 19

<212> PRT

<213> Arabidopsis sp.

<400> 142

His Leu Gly Leu Asn Phe Leu Val Ile Tyr Tyr Val Ile Arg Pro Met
 1 5 10 15

His Asp Pro

<210> 143

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 143
Asn Phe Tyr Phe
1

<210> 144
<211> 6
<212> PRT
<213> Arabidopsis sp.

<400> 144
Ile Cys Leu Gly Lys Pro
1 5

<210> 145
<211> 107
<212> PRT
<213> Arabidopsis sp.

<400> 145
Gly Phe Ala Thr Arg Thr Lys Ser Asp Lys Arg Ala Asn Arg Lys Gly
1 5 10 15

Glu Ile Ser Ala Tyr Gln Gly Lys Arg His Leu Val Ala Leu Ile Phe
20 25 30

Tyr Ser Leu Leu Tyr Val Phe Leu Lys Ile Lys Glu Arg Arg Gly Leu
35 40 45

Asn Leu Ile Thr Ile Arg Phe Gln Arg Asp Val Lys Ile His Leu Ile
50 55 60

Asn Ser Tyr Thr Leu Val Ile Ile Phe Lys Thr Lys Lys Arg Asn Phe
65 70 75 80

Gln Thr Phe Lys Leu Lys Thr Glu Phe Arg Lys Cys Gln Arg Ile Asp
85 90 95

Asn Asp Ile Gln Ile Cys Arg Val Ser Lys Thr
100 105

<210> 146
<211> 10
<212> PRT
<213> Arabidopsis sp.

<400> 146
Asn Lys Lys Ile Ile Asn Ile Phe Ile Ile
1 5 10

<210> 147
<211> 30
<212> PRT
<213> Arabidopsis sp.

<400> 147

Ser Trp Asn Leu Gly Tyr Lys Ile Lys Leu Lys Ile Ile Val Asp Phe
 1 5 10 15

Phe Val Phe Val Lys Gln Asn Ser Asn Thr Ile Cys Phe Phe
 20 25 30

<210> 148

<211> 5

<212> PRT

<213> Arabidopsis sp.

<400> 148

Tyr Lys Glu Thr Lys
 1 5

<210> 149

<211> 15

<212> PRT

<213> Arabidopsis sp.

<400> 149

Val Gln Ile Val Phe Phe Leu Thr Phe Ser Gln Lys Ser Gln Asp
 1 5 10 15

<210> 150

<211> 38

<212> PRT

<213> Arabidopsis sp.

<400> 150

Cys Ile Tyr Gln Glu Ile Glu Ile Lys Thr Phe Val Phe Lys Tyr Ser
 1 5 10 15

Ser Phe Thr Ile Tyr Arg Val Gln Phe Leu Lys Phe Lys Lys Ser Phe
 20 25 30

Thr Tyr Ile Leu Leu Asp
 35

<210> 151

<211> 147

<212> PRT

<213> Arabidopsis sp.

<400> 151

Gln Arg Lys Phe Glu Leu Arg Tyr Ile Pro Ser Val Ala Thr His Ala
 1 5 10 15

Ser His His Gln Ser Phe Asp Leu Asn Gln Pro Ala Ala Glu Asp Asp
 20 25 30

Asn Gly Gly Asp Asn Lys Ser Leu Leu Ser Arg Met Gln Asn Pro Leu
 35 40 45

Arg His Phe Ser Ala Ser Ser Asp Tyr Asn Ser Tyr Glu Asp Gln Gly
 50 55 60

Tyr Val Leu Asp Glu Asp Gln Asp Tyr Ala Leu Glu Glu Asp Val Pro
 65 70 75 80

Leu Phe Leu Asp Glu Asp Val Pro Leu Leu Pro Ser Val Lys Leu Pro
 85 90 95

Ile Val Glu Lys Leu Pro Arg Ser Ile Thr Trp Val Phe Thr Lys Arg
 100 105 110

His Val Cys Phe Leu Phe Arg Thr Ser Phe Lys Ile Leu Ile Ile Tyr
 115 120 125

Tyr Ile Val Ile Thr His Ser Ala Tyr Ile His Phe Phe Asn Ile Ala
 130 135 140

Val Ala Ser
 145

<210> 152

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 152

Trp Leu Lys Val Ile Leu
 1 5

<210> 153

<211> 8

<212> PRT

<213> Arabidopsis sp.

<400> 153

Leu Val Arg Asp Lys Ser Ile Ile
 1 5

<210> 154

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 154

Met Val Arg His
 1

<210> 155
 <211> 26
 <212> PRT
 <213> Arabidopsis sp.

<400> 156
 Ala Val Lys Lys Met Arg Lys Met Lys Lys Lys Met Arg Lys Lys Ser
 1 5 10 15

Arg Lys Lys Asn Ala Asn Phe Leu Lys Met
 20 25

<210> 156
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.

<400> 156
 Thr Asp Leu Tyr Gly
 1 5

<210> 157
 <211> 7
 <212> PRT
 <213> Arabidopsis sp.

<400> 157
 Phe Leu His Tyr Ile Cys Ser
 1 5

<210> 158
 <211> 25
 <212> PRT
 <213> Arabidopsis sp.

<400> 158
 Leu Leu Ile Cys Ser Pro Tyr Leu Ile Asn Cys Ser Arg Asn Phe Gln
 1 5 10 15

Asp Gly Trp Ala Gly Leu Trp Phe Gly
 20 25

<210> 159
 <211> 32
 <212> PRT
 <213> Arabidopsis sp.

<400> 159
 Ser Gly Arg Ala Ala Cys Ser Arg Gln Val Pro Arg Ser Gly Cys Phe
 1 5 10 15

Gly His Ile Gly Asn Asn Ile Arg Ile Lys Thr Ser Tyr Val Asp Gln
 20 25 30

<210> 160
 <211> 12
 <212> PRT
 <213> Arabidopsis sp.

<400> 160
 Leu Ser Cys Leu Phe Asn Phe Cys Cys Phe Ser Ser
 1 5 10

<210> 161
 <211> 10
 <212> PRT
 <213> Arabidopsis sp.

<400> 161
 Ile Phe Lys Ser Asn Val Gly Lys Ile Gln
 1 5 10

<210> 162
 <211> 4
 <212> PRT
 <213> Arabidopsis sp.

<400> 162
 Trp Asn Cys Trp
 1

<210> 163
 <211> 14
 <212> PRT
 <213> Arabidopsis sp.

<400> 163
 Phe Asp Ile Gln Asp Asn Asn Tyr Cys Phe Pro Gly Phe Cys
 1 5 10

<210> 164
 <211> 59
 <212> PRT
 <213> Arabidopsis sp.

<400> 164
 Thr Ser Leu Pro Ser Leu His Gly Asn Phe Glu Ser Phe Phe Phe Asn
 1 5 10 15

Leu Ala Thr Lys Lys Gly Asp Asp His Thr Cys Phe Tyr Phe Ile Leu
 20 25 30

Ser Phe Val Leu Gln Ile Phe Asp Cys His Met His Glu Lys Tyr Glu
 35 40 45

Pro Glu Ser Arg Ser Val Ser Ile Lys Phe Ile
 50 55

<210> 165
 <211> 15
 <212> PRT
 <213> Arabidopsis sp.

<400> 165
 Ile Ile Leu Leu Val Ser Gln Pro Leu Tyr Ile Arg Leu Ser Asp
 1 5 10 15

<210> 166
 <211> 56
 <212> PRT
 <213> Arabidopsis sp.

<400> 166
 Ile Ala Leu Ala Cys Gln Ser Glu Asp Lys Ser Ser Leu Phe Glu Asp
 1 5 10 15

Glu Asp Arg Gln Pro Cys Ser Glu His Cys Tyr Leu Lys Val Ser Ile
 20 25 30

Ser Leu Pro Leu Ser Leu Asn Phe Phe Val Tyr Ser Leu Ile Thr Phe
 35 40 45

Ile Ser Tyr Trp Phe Asn Ile Lys
 50 55

<210> 167
 <211> 50
 <212> PRT
 <213> Arabidopsis sp.

<400> 167
 Val Arg Ser Val Thr Glu Ala Asp His Val Met Asp Asn Asp Asn Ser
 1 5 10 15

Ile Ser Asn Lys Ile Val Val Ser Asp Pro Asn Asn Thr Met Trp Thr
 20 25 30

Pro Val Glu Lys Asp Leu Tyr Leu Lys Gly Ile Glu Ile Phe Gly Arg
 35 40 45

Asn Arg
 50

<210> 168
 <211> 68
 <212> PRT
 <213> Arabidopsis sp.

<400> 168
 Lys Asn Lys Asn Arg Phe Asn Ala Leu Ile Tyr Ile Leu Thr Leu Tyr
 1 5 10 15

Ser Leu Ile Met Leu Val Arg Ser Cys Asp Val Ala Leu Asn Ile Leu
 20 25 30

Arg Gly Leu Lys Thr Cys Leu Glu Ile Tyr Asn Tyr Met Arg Glu Gln
 35 40 45

Asp Gln Cys Thr Met Ser Leu Asp Leu Asn Lys Thr Thr Gln Arg His
 50 55 60

Asn Gln Val His
 65

<210> 169

<211> 23

<212> PRT

<213> Arabidopsis sp.

<400> 169

Lys His Met Lys Phe Pro Ile Cys Val Asp Gly Phe Ile Thr Gly Tyr
 1 5 10 15

Gln Lys Ser Ile Ser Lys Lys
 20

<210> 170

<211> 22

<212> PRT

<213> Arabidopsis sp.

<400> 170

Val Gly Pro Gln Lys Ile Glu Thr Pro Lys Ile Cys Ser Leu Ser Ala
 1 5 10 15

Cys Phe Lys Glu Asn Asn
 20

<210> 171

<211> 41

<212> PRT

<213> Arabidopsis sp.

<400> 171

Ala Leu His Thr Met His Leu Gln Val Lys Met Trp Thr Ala Met Pro
 1 5 10 15

Leu Phe Asn Ser Arg Lys Leu Leu Arg Glu Ile Leu Arg Val Cys His
 20 25 30

Ser Ile Phe Pro Lys Pro Glu Asp Pro
 35 40

<210> 172
 <211> 108
 <212> PRT
 <213> Arabidopsis sp.

<400> 172
 Val Cys Ile Phe Cys Ser Gly Ala Gln Arg Ile Ala Thr Ile Ala Leu
 1 5 10 15
 Glu Asp Val Ile Val Gln Leu Ala Asn Ala Gln Ile Asp Asn Val Leu
 20 25 30
 Val Leu Leu Leu Ile Val Asn Ala Ile Gln Ile Phe Val Gly Val Val
 35 40 45
 Leu Leu Gly Asn Thr Phe Thr Ser Ile Ser Leu Tyr Thr Asn Ser Ile
 50 55 60
 Ile Lys Val Ile Gln Thr Lys Ser Leu Ile Lys Lys Thr Leu Tyr Ile
 65 70 75 80
 Ala Val Glu Met Ala Leu Leu Val Arg His Gln Cys Lys Ser Asn Ala
 85 90 95
 Arg Thr Cys Asn Ser Ser Phe Lys Pro Ile Lys Arg
 100 105

<210> 173
 <211> 17
 <212> PRT
 <213> Arabidopsis sp.

<400> 173
 Ser Thr Ser Asn Pro Tyr Arg Lys Phe Lys Thr Asn Tyr Thr Lys Asp
 1 5 10 15
 Ile

<210> 174
 <211> 7
 <212> PRT
 <213> Arabidopsis sp.

<400> 174
 Leu Ser Phe Pro Val Phe Tyr
 1 5

<210> 175
 <211> 39
 <212> PRT
 <213> Arabidopsis sp.

<400> 175

Ile Leu Ile Gly Lys Ser Asp Val His Gly Trp Gly Ala Phe Thr Trp
 1 5 10 15

Val Ser Asn His Val Asn Ile Arg Ile Ser Leu Ile Val Ile Gly Ala
 20 25 30

Phe Ile Thr Leu Phe Phe Phe
 35

<210> 176

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 176

Cys Phe Ile Leu
 1

<210> 177

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 177

Thr Ile Lys Tyr Ile Val
 1 5

<210> 178

<211> 53

<212> PRT

<213> Arabidopsis sp.

<400> 178

Tyr Gly Leu Thr Arg Gln Asp Ser Leu Lys Lys Asn Glu Tyr Leu Gly
 1 5 10 15

Glu Tyr Thr Gly Glu Leu Ile Thr His Asp Glu Ala Asn Glu Arg Gly
 20 25 30

Arg Ile Glu Asp Arg Ile Gly Ser Ser Tyr Leu Phe Thr Leu Asn Asp
 35 40 45

Gln Val Thr Ser Glu
 50

<210> 179

<211> 28

<212> PRT

<213> Arabidopsis sp.

<400> 179

Ser Asn Val Leu Ile Ile Arg Gly Leu His Ile Tyr Ser Asn Gln Ser
 1 5 10 15

Asn Ile Tyr Phe Thr Ala Arg Asn Arg Cys Ser Pro
 20 25

<210> 180

<211> 13

<212> PRT

<213> Arabidopsis sp.

<400> 180

Arg Lys Arg Val Gln Ile Ser Gln Ser Leu Ser Lys Thr
 1 5 10

<210> 181

<211> 16

<212> PRT

<213> Arabidopsis sp.

<400> 181

Leu Leu Arg Gln Gly Thr Lys Pro Leu Tyr Phe Ile Leu Asn Lys Tyr
 1 5 10 15

<210> 182

<211> 13

<212> PRT

<213> Arabidopsis sp.

<400> 182

His Tyr Thr Asn Lys Asn Thr Tyr Val Ser Phe Phe Ser
 1 5 10

<210> 183

<211> 24

<212> PRT

<213> Arabidopsis sp.

<400> 183

Ile Val Tyr Gln Leu Tyr Ser Ser Leu Ile Gly Phe His Ile Glu Asp
 1 5 10 15

Ile Pro Arg Asn Ser Asn Ser Phe
 20

<210> 184

<211> 78

<212> PRT

<213> Arabidopsis sp.

<400> 184

Met Ile Phe Ser Cys Arg Glu Asn Leu Gly Tyr Glu Asn Leu Trp Phe
 1 5 10 15

Arg Val Gln Leu Met Ile Val Arg Gly Asp Gln Arg Ile Gly Leu Phe
 20 25 30

Ala Glu Arg Ala Ile Glu Glu Gly Glu Leu Phe Phe Asp Tyr Cys
 35 40 45

Tyr Gly Pro Glu His Ala Asp Trp Ser Arg Gly Arg Glu Pro Arg Lys
 50 55 60

Thr Gly Ala Ser Lys Arg Ser Lys Glu Ala Arg Pro Ala Arg
 65 70 75

<210> 185

<211> 37

<212> PRT

<213> Arabidopsis sp.

<400> 185

Gly Glu Ala Ala Ile Gln Ala Val Leu Phe Leu Cys Tyr Gly Ile Ser
 1 5 10 15

Ile Asn Asn Val Met Leu Phe Cys Val Thr Lys Pro Lys Leu Lys Phe
 20 25 30

Leu Phe Tyr Leu Phe
 35

<210> 186

<211> 9

<212> PRT

<213> Arabidopsis sp.

<400> 186

Gly Val Leu Phe Val Ser Tyr Val Ser
 1 5

<210> 187

<211> 10

<212> PRT

<213> Arabidopsis sp.

<400> 187

Leu Ser Lys Phe Ser Phe Cys Ile Ser Ile
 1 5 10

<210> 188

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 188

Lys Gln Cys Leu Cys Cys

1

5

<210> 189

<211> 29

<212> PRT

<213> Arabidopsis sp.

<400> 189

Thr Phe Gly Lys Lys Lys Leu Cys Thr Thr Leu His Leu Phe Ser Leu

1

5

10

15

His Leu Ala Lys Asn His Ile Thr Gln Val Cys Gly Thr

20

25

<210> 190

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 190

Cys Thr Lys Met Ser Lys

1

5

<210> 191

<211> 12

<212> PRT

<213> Arabidopsis sp.

<400> 191

Trp Val Leu Ser Leu Lys Lys Asn Ile Gly Tyr Glu

1

5

10

<210> 192

<211> 19

<212> PRT

<213> Arabidopsis sp.

<400> 192

Ser Ile Val Arg Ile Leu Gly Ile Ser Ser Phe Gly Phe Lys Thr Phe

1

5

10

15

Phe Glu Ile

<210> 193

<211> 24

<212> PRT

<213> Arabidopsis sp.

<400> 193

Phe Cys Ser Leu Leu Ser Asn Thr Trp Lys Asn His Gln Gln Ser Gly
 1 5 10 15

Cys Ser Leu Arg Lys Val Leu Leu
 20

<210> 194

<211> 10

<212> PRT

<213> Arabidopsis sp.

<400> 194

Cys Lys Tyr Val Phe Asp Ala Ser Asn Ile
 1 5 10

<210> 195

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 195

Tyr Leu Asn Lys
 1

<210> 196

<211> 13

<212> PRT

<213> Arabidopsis sp.

<400> 196

Lys Gln Lys Lys Arg Lys Lys Leu Phe Lys Ile Arg Lys
 1 5 10

<210> 197

<211> 24

<212> PRT

<213> Arabidopsis sp.

<400> 197

Leu Phe Ser Lys Asn Leu Asn Tyr Lys Leu Lys Cys Leu Glu Ser Arg
 1 5 10 15

Thr Thr Ile Ala Lys Tyr Lys Cys
 20

<210> 198

<211> 5

<212> PRT

<213> Arabidopsis sp.

<400> 198

Ile Tyr Met Lys Met
1 5

<210> 199

<211> 13

<212> PRT

<213> Arabidopsis sp.

<400> 199

Lys Thr Cys Trp Ile Cys Gly Ile Val Asn Asp His Gly
1 5 10

<210> 200

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 200

Met Ala Gly Ser
1

<210> 201

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 201

Ile His Tyr Phe
1

<210> 202

<211> 48

<212> PRT

<213> Arabidopsis sp.

<400> 202

Lys Ser Asn Phe Phe Ile Ser Ile Ile Cys Phe Lys Glu Lys Lys Asn
1 5 10 15Thr Arg Arg Leu Ser Ile Cys Arg Leu Cys Ser Ser Val Asn Leu Tyr
20 25 30Phe Lys Thr Gly Gly Leu Phe Ile Thr Ile Ser Leu Asp Met Phe Leu
35 40 45

<210> 203

<211> 24

<212> PRT

<213> Arabidopsis sp.

<400> 203

Cys Arg Pro Lys Asn Arg Glu Ile Arg Lys Gly Thr Phe Val Val Ile
 1 5 10 15

Val Thr Lys Gln Lys Ser Leu Tyr
 20

<210> 204

<211> 11

<212> PRT

<213> Arabidopsis sp.

<400> 204

Ile Ile Arg Lys Asp Glu Lys Ile Lys Pro Leu
 1 5 10

<210> 205

<211> 12

<212> PRT

<213> Arabidopsis sp.

<400> 205

Leu Asp Asp His Arg Arg Gly Cys Gln Leu Gln Ser
 1 5 10

<210> 206

<211> 34

<212> PRT

<213> Arabidopsis sp.

<400> 206

Cys Phe Tyr Ile Asp Leu Ser Tyr Ile Leu Cys Ser Phe Thr Phe Lys
 1 5 10 15

Lys Gln Tyr His Pro Ile Phe Phe Leu Leu Ser Val Ser Ile Phe
 20 25 30

Ala Asn

<210> 207

<211> 21

<212> PRT

<213> Arabidopsis sp.

<400> 207

Arg Asn Thr Lys Glu His Lys Lys Gln Leu Val Pro Asp Ser Thr Ile
 1 5 10 15

Ser Asn Asp Leu His
 20

<210> 208
 <211> 106
 <212> PRT
 <213> Arabidopsis sp.

<400> 208
 Pro Pro Pro Pro Ser Ile Phe Pro Leu Ser Phe Thr Ser Leu Ser Leu
 1 5 10 15
 Tyr Leu Leu Asn Ser Gly His Arg Leu Arg Arg Phe Leu Cys Tyr Ser
 20 25 30
 Pro Gly Arg Cys Arg Ser Leu Ile His Asp Leu Val Ser His His Arg
 35 40 45
 Leu His Phe Asn Pro Gln Ser Leu Arg Lys Thr Arg Met Leu Cys Ser
 50 55 60
 Pro Phe Pro Ser Leu His Leu Leu Asp Arg Ser Leu His Arg Pro Ser
 65 70 75 80
 Leu Cys Leu Trp Asp Gln Lys Asn His Glu His Asp His Val Tyr Lys
 85 90 95
 Ser Arg Gln Lys Leu Val Ser Cys Asp Thr
 100 105

<210> 209
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.

<400> 209
 Lys Met Asp Val Gly
 1 5

<210> 210
 <211> 15
 <212> PRT
 <213> Arabidopsis sp.

<400> 210
 Gly Phe Val Leu Phe Gly Ala Thr Arg Ser Asp Ala Asp Val Val
 1 5 10 15

<210> 211
 <211> 32
 <212> PRT
 <213> Arabidopsis sp.

<400> 211
 Gln His Tyr Ile Trp Gly Leu Arg Gly Gly Glu Val Val Arg Glu Ser
 1 5 10 15

Arg Cys Gly Ser Asp Leu Trp Tyr Asn Val Val Val Glu Ala Lys Arg
 20 25 30

<210> 212

<211> 11

<212> PRT

<213> Arabidopsis sp.

<400> 212

Gly Arg Lys Ser Cys Gly Gly Tyr Gly Gly
 1 5 10

<210> 213

<211> 42

<212> PRT

<213> Arabidopsis sp.

<400> 213

Pro Pro His Ser Phe Gly Gly Ser Gln Phe Cys Glu Leu Val Tyr Val
 1 5 10 15

Leu His Leu Cys Trp Asn Trp Phe Asn Glu Asp Leu Gln Arg Val Phe
 20 25 30

Gly Phe Cys Glu Tyr Val Asp Phe Glu His
 35 40

<210> 214

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 214

Glu Val Glu Lys Arg Leu
 1 5

<210> 215

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 215

Ile Met Cys Phe
 1

<210> 216

<211> 27

<212> PRT

<213> Arabidopsis sp.

<400> 216
 Ser Cys Val Arg Tyr Leu Thr Tyr Tyr Thr His Leu Leu Asn Val Phe
 1 5 10 15

Glu Ile Phe Leu Phe Leu Phe Ser Ile Ser Cys
 20 25

<210> 217
 <211> 25
 <212> PRT
 <213> Arabidopsis sp.

<400> 217
 Glu Phe Asn Pro Tyr Ile Cys His Lys Asn Ser Arg Ile Ser Glu Ser
 1 5 10 15

Lys Asn Ile Leu Ser Lys Asn Asn His
 20 25

<210> 218
 <211> 16
 <212> PRT
 <213> Arabidopsis sp.

<400> 218
 Leu Tyr Phe Tyr Asn Thr Pro Phe Leu Arg Lys Thr Trp Arg Phe Asn
 1 5 10 15

<210> 219
 <211> 12
 <212> PRT
 <213> Arabidopsis sp.

<400> 219
 Lys Ile Ser Asp Leu Arg Arg Ser Phe Lys Cys Val
 1 5 10

<210> 220
 <211> 6
 <212> PRT
 <213> Arabidopsis sp.

<400> 220
 Leu Asn Leu Arg Ile Glu
 1 5

<210> 221
 <211> 25
 <212> PRT
 <213> Arabidopsis sp.

<400> 221
 Tyr Ser His Ile Tyr Ile Phe Glu Asp Leu Asn Ser Phe Cys Phe Phe
 1 5 10 15

His Ile Cys Ile Ile Tyr Lys Leu Lys
 20 25

<210> 222
 <211> 9
 <212> PRT
 <213> Arabidopsis sp.

<400> 222
 Ile Leu Ile Tyr Ile Met Thr Leu Ile
 1 5

<210> 223
 <211> 10
 <212> PRT
 <213> Arabidopsis sp.

<400> 223
 Val Leu Pro Asp Thr Pro Lys Cys Ile Tyr
 1 5 10

<210> 224
 <211> 9
 <212> PRT
 <213> Arabidopsis sp.

<400> 224
 Ser Ile Asn Ile Phe Ser Leu Val Tyr
 1 5

<210> 225
 <211> 14
 <212> PRT
 <213> Arabidopsis sp.

<400> 225
 Thr Lys Leu Ser His Lys Tyr Glu Leu Thr Pro Phe Phe Leu
 1 5 10

<210> 226
 <211> 13
 <212> PRT
 <213> Arabidopsis sp.

<400> 226
 Ala Val Lys Arg Gln Ala Asn Pro Thr Ser Thr Tyr Ile
 1 5 10

<210> 227

<211> 30

<212> PRT

<213> Arabidopsis sp.

<400> 227

Tyr Tyr Ile Leu Lys Ile Lys Ile Phe Leu Asn Phe Pro Tyr Tyr Phe
 1 5 10 15

Pro Phe Lys Ala Ser Lys Ser Lys Tyr Val Ser Ser Arg Leu
 20 25 30

<210> 228

<211> 15

<212> PRT

<213> Arabidopsis sp.

<400> 228

Phe Ser Leu Ile Arg Phe Ser Thr Lys Lys Asn Gln Leu Leu Ile
 1 5 10 15

<210> 229

<211> 39

<212> PRT

<213> Arabidopsis sp.

<400> 229

Lys Thr Leu Cys Ile Ile Leu Phe Thr Asn Ile Arg Glu Asp Glu Lys
 1 5 10 15

Lys Arg Arg Gly Glu Trp Leu Met Glu Lys Val Ser Phe Thr Pro Asn
 20 25 30

Ile Tyr Glu Leu Thr Arg Leu
 35

<210> 230

<211> 9

<212> PRT

<213> Arabidopsis sp.

<400> 230

Asn Pro Tyr Ile Leu Ile Val Cys Leu
 1 5

<210> 231

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 231

Ile Asn Asn Ile
 1

<210> 232

<211> 19

<212> PRT

<213> Arabidopsis sp.

<400> 232

Ser	Ile	Met	Leu	Phe	Val	Pro	Cys	Met	Ile	His	Lys	Thr	Phe	Ile	Phe
1				5					10					15	

Glu Phe Val

<210> 233

<211> 37

<212> PRT

<213> Arabidopsis sp.

<400> 233

Glu	Asn	His	Glu	Asp	Asp	Gly	Glu	Gly	Leu	Pro	Pro	Glu	Leu	Asn	Gln
1				5					10					15	

Ile	Lys	Glu	Gln	Ile	Glu	Lys	Glu	Arg	Phe	Leu	His	Ile	Lys	Val	Arg
			20					25					30		

Asp	Ile	Trp	Leu	Leu
			35	

<210> 234

<211> 9

<212> PRT

<213> Arabidopsis sp.

<400> 234

Tyr	Phe	Ile	Leu	Phe	Cys	Met	Phe	Phe
1				5				

<210> 235

<211> 10

<212> PRT

<213> Arabidopsis sp.

<400> 235

Lys	Leu	Arg	Arg	Gly	Glu	Asp	Leu	Ile	Ser
1				5				10	

<210> 236

<211> 11

<212> PRT

<213> Arabidopsis sp.

<400> 236

Leu	Tyr	Asp	Ser	Lys	Glu	Met	Leu	Arg	Tyr	Ile
1				5				10		

<210> 237
 <211> 4
 <212> PRT
 <213> Arabidopsis sp.

<400> 237
 Thr Val Ile His
 1

<210> 238
 <211> 13
 <212> PRT
 <213> Arabidopsis sp.

<400> 238
 Ser Leu Lys Leu Lys Arg Glu Ile Ser Lys Leu Leu Asn
 1 5 10

<210> 239
 <211> 26
 <212> PRT
 <213> Arabidopsis sp.

<400> 239
 Lys Gln Asn Leu Glu Asn Ala Ser Glu Ser Ile Thr Thr Ser Arg Ser
 1 5 10 15

Val Gly Tyr Pro Lys Leu Arg Ile Lys Lys
 20 25

<210> 240
 <211> 4
 <212> PRT
 <213> Arabidopsis sp.

<400> 240
 Leu Ile Tyr Leu
 1

<210> 241
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.

<400> 241
 Tyr Lys Ala Gly Thr
 1 5

<210> 242
 <211> 29
 <212> PRT
 <213> Arabidopsis sp.

<400> 242

Ile Phe Leu Phe Leu Ser Asn Lys Ile Val Ile Gln Phe Val Phe Phe
 1 5 10 15

Ser Thr Lys Lys Leu Asn Arg Ser Lys Leu Phe Phe Phe
 20 25

<210> 243

<211> 34

<212> PRT

<213> Arabidopsis sp.

<400> 243

His Ser Ala Lys Lys Ala Lys Ile Asp Ala Tyr Ile Lys Lys Ser Lys
 1 5 10 15

Ser Lys Leu Leu Tyr Ser Ser Ile Leu Val Ser Leu Tyr Ile Glu Ser
 20 25 30

Ser Phe

<210> 244

<211> 18

<212> PRT

<213> Arabidopsis sp.

<400> 244

Asn Leu Lys Asn His Leu Pro Ile Tyr Tyr Leu Ile Asn Arg Glu Asn
 1 5 10 15

Ser Ser

<210> 245

<211> 17

<212> PRT

<213> Arabidopsis sp.

<400> 245

Asp Thr Phe Gln Val Trp Leu Leu Met Leu His Thr Ile Asn Arg Leu
 1 5 10 15

Thr

<210> 246

<211> 100

<212> PRT

<213> Arabidopsis sp.

<400> 246

Thr Ser Pro Leu Gln Arg Met Ile Met Glu Glu Thr Thr Asn His Phe
 1 5 10 15

Cys Arg Glu Cys Lys Thr His Phe Val Ile Ser Val Pro His Leu Ile
 20 25 30

Ile Ile Leu Thr Lys Ile Lys Val Met Phe Leu Met Arg Ile Lys Ile
 35 40 45

Met Leu Leu Lys Lys Met Tyr His Tyr Phe Leu Met Lys Met Tyr His
 50 55 60

Tyr Tyr Gln Val Ser Ser Phe Gln Leu Leu Arg Ser Tyr His Asp Pro
 65 70 75 80

Leu His Gly Ser Ser Pro Lys Gly Met Cys Val Phe Cys Phe Val Leu
 85 90 95

Val Ser Lys Tyr
 100

<210> 247

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 247

Ser Tyr Thr Ile
 1

<210> 248

<211> 13

<212> PRT

<213> Arabidopsis sp.

<400> 248

Ser Leu Ile Val His Ile Tyr Ile Ser Leu Thr Leu Gln
 1 5 10

<210> 249

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 249

Pro Ala Asp Gly
 1

<210> 250

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 250

Phe Cys Asp Trp
 1

<210> 251
 <211> 8
 <212> PRT
 <213> Arabidopsis sp.

<400> 251
 Glu Thr Asn Leu Leu Phe Glu Trp
 1 5

<210> 252
 <211> 6
 <212> PRT
 <213> Arabidopsis sp.

<400> 252
 Gly Thr Arg Ile Glu Gln
 1 5

<210> 253
 <211> 11
 <212> PRT
 <213> Arabidopsis sp.

<400> 253
 Gly Arg Asn Gln Glu Arg Lys Met Arg Ile Phe
 1 5 10

<210> 254
 <211> 18
 <212> PRT
 <213> Arabidopsis sp.

<400> 254
 Arg Cys Arg Pro Ile Tyr Met Val Ser Phe Cys Ile Thr Tyr Val Leu
 1 5 10 15

Asp Tyr

<210> 255
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.

<400> 255
 Phe Val Val His Ile
 1 5

<210> 256
 <211> 41
 <212> PRT
 <213> Arabidopsis sp.

<400> 256

Thr Ala Gln Glu Ile Phe Arg Thr Val Gly Gln Asp Tyr Gly Leu Asp
 1 5 10 15

Asp Leu Val Val Arg Arg Ala Leu Ala Lys Tyr Leu Glu Val Asp Val
 20 25 30

Ser Asp Ile Leu Val Thr Ile Phe Glu
 35 40

<210> 257

<211> 30

<212> PRT

<213> Arabidopsis sp.

<400> 257

Lys Leu His Thr Ser Ile Asn Asn Phe Pro Ala Tyr Leu Ile Phe Val
 1 5 10 15

Val Phe Arg Arg Glu Lys Cys Phe Lys Phe Ser Asn Leu Met
 20 25 30

<210> 258

<211> 51

<212> PRT

<213> Arabidopsis sp.

<400> 258

Glu Arg Tyr Asn Glu Leu Lys Leu Lys Asn Asp Gly Thr Ala Gly Glu
 1 5 10 15

Ala Ser Asp Leu Thr Ser Lys Thr Ile Thr Thr Ala Phe Gln Asp Phe
 20 25 30

Ala Asp Arg Arg His Cys Arg Arg Cys Met Val Thr Leu Asn Leu Ser
 35 40 45

Phe Leu Ile
 50

<210> 259

<211> 36

<212> PRT

<213> Arabidopsis sp.

<400> 259

Pro Gln Lys Arg Glu Met Ile Ile His Val Phe Ile Leu Phe Tyr His
 1 5 10 15

Leu Phe Tyr Arg Tyr Ser Ile Val Ile Cys Met Arg Ser Met Ser Pro
 20 25 30

Ser Leu Asp Pro
 35

<210> 260
 <211> 9
 <212> PRT
 <213> Arabidopsis sp.

<400> 260
 Ala Leu Asn Ser Phe Lys Leu Phe Cys
 1 5

<210> 261
 <211> 6
 <212> PRT
 <213> Arabidopsis sp.

<400> 261
 Phe His Asn Pro Tyr Ile
 1 5

<210> 262
 <211> 50
 <212> PRT
 <213> Arabidopsis sp.

<400> 262
 Val Ile Asn Leu Ile Arg Leu Leu Trp Leu Val Arg Ala Lys Thr Asn
 1 5 10 15
 Leu Val Cys Leu Arg Met Lys Ile Asp Asn His Ala Val Ser Ile Val
 20 25 30
 Thr Ser Arg Ser Leu Ser Leu Ser Leu Ser Ile Phe Leu Ser
 35 40 45

Ile Pro
 50

<210> 263
 <211> 12
 <212> PRT
 <213> Arabidopsis sp.

<400> 263
 Leu Arg Leu Leu Val Thr Gly Leu Ile Leu Asn Arg
 1 5 10

<210> 264
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.

<400> 264
 Gln Lys Leu Ile Met
 1 5

<210> 265
 <211> 23
 <212> PRT
 <213> Arabidopsis sp.

<400> 265
 Trp Ile Met Ile Thr Leu Tyr Gln Thr Arg Leu Trp Ser Gln Ile Gln
 1 5 10 15
 Thr Thr Leu Cys Gly Arg Leu
 20

<210> 266
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.

<400> 266
 Arg Arg Ile Phe Thr
 1 5

<210> 267
 <211> 19
 <212> PRT
 <213> Arabidopsis sp.

<400> 267
 Lys Glu Leu Arg Tyr Leu Gly Glu Thr Gly Lys Lys Ile Lys Ile Asp
 1 5 10 15

Leu Met His

<210> 268
 <211> 8
 <212> PRT
 <213> Arabidopsis sp.

<400> 268
 Tyr Ile Tyr Leu His Cys Ile Pro
 1 5

<210> 269
 <211> 10
 <212> PRT
 <213> Arabidopsis sp.

<400> 269
 Leu Cys Trp Phe Ala Val Val Met Leu His
 1 5 10

<210> 270
 <211> 9
 <212> PRT
 <213> Arabidopsis sp.

<400> 270
 Thr Tyr Phe Gly Gly Leu Arg Arg Ala
 1 5

<210> 271
 <211> 15
 <212> PRT
 <213> Arabidopsis sp.

<400> 271
 Arg Phe Thr Ile Thr Cys Ala Asn Lys Ile Asn Val Leu Cys His
 1 5 10 15

<210> 272
 <211> 28
 <212> PRT
 <213> Arabidopsis sp.

<400> 272
 Thr Leu Thr Lys Leu His Lys Asp Thr Ile Arg Tyr Thr Asn Leu Cys
 1 5 10 15

Arg Asn Tyr Ser His Asp Met Tyr Val Lys Asn Thr
 20 25

<210> 273
 <211> 95
 <212> PRT
 <213> Arabidopsis sp.

<400> 273
 Ser Phe Leu Tyr Val Leu Met Val Leu Ser Gln Val Thr Lys Lys Val
 1 5 10 15

Ser Arg Lys Ser Ser Arg Ser Val Arg Lys Lys Ser Arg Leu Arg Lys
 20 25 30

Tyr Ala Arg Tyr Pro Pro Ala Leu Lys Lys Thr Thr Ser Gly Glu Ala
 35 40 45

Lys Phe Tyr Lys His Tyr Thr Pro Cys Thr Cys Lys Ser Lys Cys Gly
 50 55 60

Gln Gln Cys Pro Cys Leu Thr His Glu Asn Cys Cys Glu Lys Tyr Cys
 65 70 75 80

Gly Tyr Val Ile Gln Phe Phe Leu Ser Arg Lys Ile His Glu Ile
 85 90 95

<210> 274
 <211> 22
 <212> PRT
 <213> Arabidopsis sp.

<400> 274
 Phe Glu His Glu Phe Val Phe Phe Val Gln Val Leu Lys Gly Leu Gln
 1 5 10 15

Gln Ser Leu Trp Arg Met
 20

<210> 275
 <211> 16
 <212> PRT
 <213> Arabidopsis sp.

<400> 275
 Leu Cys Asn Trp Pro Met His Lys Ser Thr Met Ser Leu Phe Cys Cys
 1 5 10 15

<210> 276
 <211> 11
 <212> PRT
 <213> Arabidopsis sp.

<400> 276
 Met Arg Ser Arg Ser Leu Ser Glu Leu Ser Ser
 1 5 10

<210> 277
 <211> 13
 <212> PRT
 <213> Arabidopsis sp.

<400> 277
 Val Thr Leu Ser Leu Gln Tyr Leu Phe Ile Gln Ile Leu
 1 5 10

<210> 278
 <211> 6
 <212> PRT
 <213> Arabidopsis sp.

<400> 278
 Phe Lys Pro Lys Val Leu
 1 5

<210> 279
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.

<400> 279

Lys Lys Leu Tyr Ile
1 5

<210> 280

<211> 7

<212> PRT

<213> Arabidopsis sp.

<400> 280

Leu Trp Arg Trp His Ser Trp
1 5

<210> 281

<211> 17

<212> PRT

<213> Arabidopsis sp.

<400> 281

Asp Thr Ser Ala Asn Pro Met Gln Glu His Ala Ile Pro Pro Ser Asn
1 5 10 15

Gln

<210> 282

<211> 45

<212> PRT

<213> Arabidopsis sp.

<400> 282

Lys Gly Asn Gln Arg Gln Ile Arg Thr Glu Asn Leu Lys Leu Ile Ile
1 5 10 15Arg Lys Thr Phe Asn Tyr His Phe Pro Tyr Phe Thr Arg Phe Ser Leu
20 25 30Glu Ser Leu Met Phe Met Asp Gly Val His Leu His Gly
35 40 45

<210> 283

<211> 5

<212> PRT

<213> Arabidopsis sp.

<400> 283

Leu Leu Val His Ser
1 5

<210> 284

<211> 21

<212> PRT

<213> Arabidopsis sp.

<400> 284

His Phe Phe Phe Phe Asn Asn Val Leu Tyr Phe Arg Pro Leu Asn Ile
 1 5 10 15

Leu Cys Asp Met Val
 20

<210> 285

<211> 18

<212> PRT

<213> Arabidopsis sp.

<400> 285

Pro Val Arg Thr Leu Leu Lys Arg Met Ser Ile Ser Glu Asn Ile Leu
 1 5 10 15

Glu Asn

<210> 286

<211> 11

<212> PRT

<213> Arabidopsis sp.

<400> 286

Ser Leu Met Met Lys Leu Met Ser Val Gly Glu
 1 5 10

<210> 287

<211> 11

<212> PRT

<213> Arabidopsis sp.

<400> 287

Lys Ile Gly Leu Val Leu Pro Thr Ser Leu Pro
 1 5 10

<210> 288

<211> 9

<212> PRT

<213> Arabidopsis sp.

<400> 288

Leu Gln Asn Asn Phe Glu Val Thr Phe
 1 5

<210> 289

<211> 51

<212> PRT

<213> Arabidopsis sp.

<400> 289

Ser Phe Ala Gly Tyr Thr Ser Ile Arg Ile Lys Val Thr Phe Ile Leu
 1 5 10 15

Gln Leu Glu Ile Asp Ala Arg Arg Lys Gly Asn Glu Phe Lys Phe Leu
 20 25 30

Asn His Ser Ala Arg Pro Asn Cys Tyr Ala Lys Val Leu Ser Arg Tyr
 35 40 45

Thr Leu Ser
 50

<210> 290

<211> 26

<212> PRT

<213> Arabidopsis sp.

<400> 290

Thr Asn Thr Asn Ile Ile Gln Thr Lys Ile Leu Met Leu Val Ser Leu
 1 5 10 15

Val Lys Ser Cys Ile Asn Phe Thr Arg Arg
 20 25

<210> 291

<211> 16

<212> PRT

<213> Arabidopsis sp.

<400> 291

Leu Val Phe Ile Leu Lys Ile Phe Gln Glu Thr Gln Thr His Phe Lys
 1 5 10 15

<210> 292

<211> 7

<212> PRT

<213> Arabidopsis sp.

<400> 292

Phe Phe Leu Val Glu Lys Ile
 1 5

<210> 293

<211> 10

<212> PRT

<213> Arabidopsis sp.

<400> 293

Val Thr Lys Ile Tyr Gly Phe Val Cys Ser
 1 5 10

<210> 294
 <211> 57
 <212> PRT
 <213> Arabidopsis sp.

<400> 294
 Glu Glu Ile Arg Gly Leu Val Tyr Leu Arg Arg Glu Gln Ser Lys Lys
 1 5 10 15
 Val Arg Ser Phe Ser Ser Thr Thr Ala Met Asp Gln Asn Met Arg Ile
 20 25 30
 Gly Arg Val Val Glu Asn Leu Glu Arg Leu Val Leu Leu Lys Gly Leu
 35 40 45
 Arg Lys Pro Val Gln Leu Val Ser Phe
 50 55

<210> 295
 <211> 21
 <212> PRT
 <213> Arabidopsis sp.

<400> 295
 Ser Glu Glu Lys Gln Gln Phe Lys Gln Ser Phe Phe Tyr Val Met Val
 1 5 10 15
 Tyr Gln Leu Ile Met
 20

<210> 296
 <211> 66
 <212> PRT
 <213> Arabidopsis sp.

<400> 296
 Cys Tyr Phe Val Leu Leu Asn Gln Asn Leu Ser Phe Cys Phe Ile Cys
 1 5 10 15
 Phe Arg Val Phe Cys Leu Tyr His Met Cys Leu Asn Phe Gln Ser Phe
 20 25 30
 Leu Phe Val Phe Gln Phe Lys Asn Asn Val Tyr Val Val Ser Leu His
 35 40 45
 Arg Pro Leu Glu Lys Lys Ser Phe Ala Gln Leu Tyr Ile Tyr Leu Val
 50 55 60
 Phe Ile
 65

<210> 297
 <211> 4
 <212> PRT
 <213> Arabidopsis sp.

<400> 297
 Arg Lys Ile Thr
 1

<210> 298
 <211> 18
 <212> PRT
 <213> Arabidopsis sp.

<400> 298
 His Lys Ser Val Val Arg Asn Val Gln Lys Cys Gln Asn Asn Gly Phe
 1 5 10 15

Tyr His

<210> 299
 <211> 9
 <212> PRT
 <213> Arabidopsis sp.

<400> 299
 Lys Lys Ile Leu Val Met Asn Glu Val
 1 5

<210> 300
 <211> 18
 <212> PRT
 <213> Arabidopsis sp.

<400> 300
 Val Leu Ala Arg Leu Val Leu Lys Arg Phe Ser Arg Phe Asn Phe Val
 1 5 10 15

Val Tyr

<210> 301
 <211> 32
 <212> PRT
 <213> Arabidopsis sp.

<400> 301
 Val Ile His Gly Arg Ile Ile Asn Lys Val Ala Val Ala Tyr Glu Arg
 1 5 10 15

Phe Tyr Phe Asn Val Asn Met Tyr Leu Met His Leu Thr Phe Ser Ile
 20 25 30

<210> 302
 <211> 22
 <212> PRT
 <213> Arabidopsis sp.

<400> 302
 Thr Asn Lys Asn Lys Lys Lys Glu Lys Ser Ser Leu Lys Ser Glu Ser
 1 5 10 15

Asn Tyr Phe Gln Lys Ile
 20

<210> 303
 <211> 21
 <212> PRT
 <213> Arabidopsis sp.

<400> 303
 Ile Ile Asn Leu Asn Val Trp Asn Arg Glu Arg Leu Leu Leu Asn Ile
 1 5 10 15

Asn Ala Lys Tyr Thr
 20

<210> 304
 <211> 20
 <212> PRT
 <213> Arabidopsis sp.

<400> 304
 Arg Cys Glu Lys His Val Gly Phe Val Glu Ser Leu Met Thr Thr Val
 1 5 10 15

Lys Trp Arg Asp
 20

<210> 305
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: primer Nir
 Cla-73

<400> 305
 ggcgacatc aaacctactt agc

23

<210> 306
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer cerln2

 <400> 306
 tgtaacatta aggcctttcc tttt 24

 <210> 307
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:primer
 Nir-C-2-S-N

 <400> 307
 cggtcatcaa gtgagttatg aag 23

 <210> 308
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:primer cerls659

 <400> 308
 ggtccaatcg gcaatgagt 19

 <210> 309
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:primer
 cerlins10596n

 <400> 309
 gtccaatcgg caatgagtag ag 22

 <210> 310
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:primer Nir
 La-4Cla-S-S

 <400> 310
 gtgtgcctaa cagtttccgc ac 22

<210> 311
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer
 cerlins10265n

<400> 311
 tctcggagat ggtgccatat cagc

24

<210> 312
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer
 fie3cds5'.seq

<400> 312
 atgtcctctg gagagcagaa ggaagagtcg ttttacacgg

40

<210> 313
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer
 cerlins10129n

<400> 313
 tctggagagc agaaggaaga gtcg

24

<210> 314
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer
 cerlins10030n

<400> 314
 cgagtcattg acgtcaacag tg

22

<210> 315
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer
 cerlns9922n

<400> 315
 ctgcgaaatg tgcagagtct tgtg

24

<210> 316
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer
 cerlnl570

<400> 316
 aggtcatcgc tatgaagttc

20

<210> 317
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer
 cerlns98f9511n

<400> 317
 gctagttgtg gtatggacac

20

<210> 318
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer
 cerlns98f9311s

<400> 318
 cacatggact gatgatccat c

21

<210> 319
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer
 cerls2099

<400> 319
gtaaccgttg gtttggtgat

20

<210> 320
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer Nir
E-4-N-N

<400> 320
ggttagtaag tcaatgatgg ttaag

25

<210> 321
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer
cerlns8795n

<400> 321
gcgataggtg atcagagag

19

<210> 322
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer
cerlns8517n

<400> 322
ctgtaatcag gcaaacagcc

20

<210> 323
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer
cerlns98f8483s

<400> 323
cagccatgtc tgtcgtggga

20

<210> 324

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer
fie3cds3'.seq

<400> 324

atccatcttc tctctcacca atgcagtgaa aatttcttaa

40